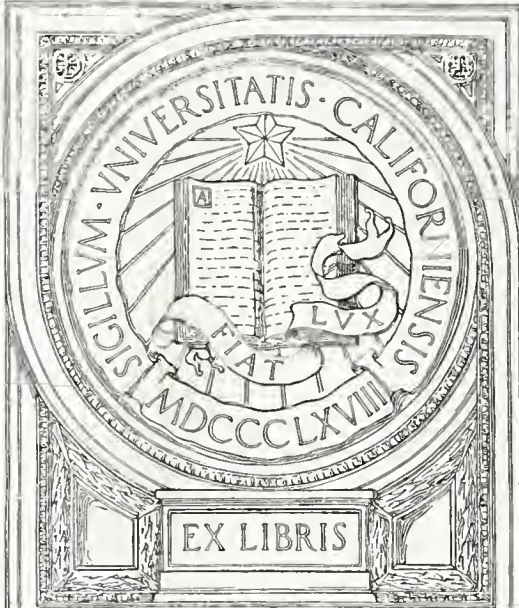






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# THE JOURNAL

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## South Carolina Medical Association

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## EDITORIAL

### CANCER NUMBER

The Journal has never published special numbers without very definite indications, believing that under this plan when the Journal does come out with a special edition it will be considered an important matter and therefore read with keener interest than the average number. We hope this will be the case now. The State Medical Association has always been interested in the Cancer problem and from time to time has taken special action from an educational point of view looking toward combating the disease. It is believed that the plan suggested in this issue of the Journal promises greater results than any plan hitherto pursued for our State. We therefore publish herewith the plans as outlined by the Chairman of the Special Committee.

#### *Special Committee Plans*

The House of Delegates last year passed a resolution adopting the five-year program of

cancer control and education outlined by the American Society for the Control of Cancer. A State Cancer Committee was appointed consisting of: Dr. J. Richard Allison, Columbia, Chairman; Dr. W. M. Sheridan, Spartanburg; Dr. F. H. McLeod, Florence; Dr. Hugh Smith, Greenville; Dr. Kenneth Lynch, Charleston; Dr. T. R. W. Wilson, Greenville.

This committee met in Columbia, December 21, with Dr. J. W. Cox, Southern Field Representative for the American Society for the Control of Cancer. Dr. Cox outlined to the committee the work being done in other states and made suggestions to the committee for cancer work in South Carolina.

The American Society for the Control of Cancer was organized several years ago by leading cancer specialists in the United States. Soon after its organization, it was given an endowment by J. D. Rockefeller, Jr., which enabled the Society to broaden its scope of work throughout the country. This organization is



a national health organization devoted to cancer educational work.

In no disease is there a more direct relationship between the results of education and successful treatment than there is in cancer. The average practitioner sees very few cases of cancer in the course of a year. The ones he does see are usually advanced and hopeless. This leads to a pessimistic attitude as to what can be done for cancer. The patient, on the other hand, when told that he has a cancer, gives up hope. It is the aim of this national cancer organization to combat this attitude on the part of both the profession and the laity, by an educational program. South Carolina is one of the last states to adopt their program.

The Society's work in other states has been organized into a so-called five-year plan in which they concentrate their efforts each year on some particular phase of cancer work. There are three locations of cancer where early diagnosis can usually be made because of our knowledge of certain conditions that are likely to change to cancer. These so-called preventable cancers are, cancers of the skin, breast, and female reproductive organs. The educational program of this society up to the present time has therefore been centered particularly on these three types of cancer. This Society will furnish to the State Cancer Committee first—literature on various phases of cancer work. This literature has been compiled by cancer experts for distribution to physicians and lay organizations. These pamphlets are available for medical societies and for each physician in quantities sufficient for distribution to his patients. Second—lantern slides, moving pictures and illustrated lectures which have already been placed with the Chairman of the State Cancer Committee.

The best method of using the material furnished by the national society and the information they desire the physician and laity to have, was discussed at the State Cancer Committee meeting, the ultimate aim being that each district and County Medical Society at some time in the near future have a meeting devoted either partly or wholly to cancer; that some member of that Society or a member of the Cancer Committee present this material and information to the Society. The American Society will fur-

nish to each of these meetings reprints of articles by Cancer Specialists designed for their information and pamphlets designed for their patients. Any district or county society desiring to hold such a meeting may communicate with the Chairman of the State Cancer Committee who will make arrangements to send the moving picture from Columbia; instruct the National Society in New York, the kind and quantity of literature needed at this particular meeting; and request them to send it to the President of that society on a certain date; the Chairman of the State Committee will designate a member of the Cancer Committee to give this demonstration or the local Society may appoint one of their own members.

It is the opinion of the National Society that such meetings are valuable and helpful to all physicians. There are certain facts emphasized in these pictures and reprints which, even if you know, often need to be called again to your attention. Such a meeting as described above, was held in Columbia. The Columbia Medical Society devoted its entire program to the cancer subject. The nurses and public health officials were invited. The meeting was well attended, a great deal of literature was distributed, and we believe that such meetings will serve to advance the early diagnosis and cure of cancer in South Carolina. The State Cancer Committee is willing to help any medical organization in the state in putting on such a cancer program. The American Society for the Control of Cancer is willing and anxious to furnish the material and literature; other states are carrying on this work and doing better cancer work as a result of such meetings. The opportunity is here, and I hope you will take advantage of it.

Dr. Cox stated to the Committee that it had been the experience of other state committees that it took much work and in many instances, several years to get such programs before the majority of the county organizations. Dr. S. E. Harmon, President-elect, and Dr. E. A. Hines, Secretary, were present (at the urgent invitation of the Chairman). Dr. Hines made the motion that the January number of the State Journal be made a cancer number and that this article describing the aim and actions of the Committee be published in the Journal. Dr.

Harmon suggested that the Councillor from each district be asked to aid in the cancer work, not only by actual work but by suggesting certain men in this district who would be interested in cancer and aid in arranging programs. This suggestion was adopted by the Committee. The National Society desires that the State Committee appear before certain lay organizations, giving lectures and literature carrying out their programs of education on cancer, particularly to women's clubs and men's civic clubs. Such work is already under way in other states. No doubt our state committee will be called upon for such information. Already your State Chairman has been furnished with films, litera-

ture, and newspaper articles designed for the education of the laity. Your state committee is of the opinion that our efforts should first be directed to the physicians of the state. Give them the opportunity to be well informed on all the knowledge of cancer education and its prevention. If they will not take advantage of this educational program, then the laity will naturally seek the physician who is informed on the subject. Your chairman will appreciate help and suggestions for the success of this work.

J. R. Allison, M. D., Chairman  
S. C. State Cancer Committee.

#### TRIBUTE TO DR. ROSSIE R. WALKER

Dr. Rossie R. Walker was born February 14th, 1885, in Haywood County, North Carolina. He did his preliminary college work at Davidson College in North Carolina. From Davidson he went to the University of Kentucky and there pursued his course in medicine. After his graduation from the medical school, he began his practice and life's work in Laurens and Watts Mills. For some twenty years he labored faithfully and nobly among the people. His chiefest aim in life was to serve, and this he did in the spirit of our Lord who came not to be ministered unto, but to minister. His work covered a large field and he numbered his friends in the hundreds. Hundreds have been made well through his kind and faithful attention. He took no thought for himself, because he was always too busy thinking of others. He was naturally modest and retiring, never seeking publicity for himself. There are many of his good deeds known only to the All-seeing Eye of the Universe. He made no compromise with the wrong, and the spirit of righteousness controlled his every act and thought. An intense loyalty to his friends was one of his leading characteristics. Friendship to him was a sacred possession, and many of his friends leaned upon his council, wisdom and advice. He proved himself to be a man of superior judgment and few words, and to know him intimately was to love him as a brother.

His Church was one of the leading interests of his life. He loved the Lord's Sanctuary, and his presence was there every Sunday unless he was by all means providentially hindered. The Church cause lay heavily upon his heart and he gave of his material possessions to advance the Lord's work. He was a liberal giver, but sounded no trumpet when he presented his offering. He preferred no praise and had rather his donation be kept a secret due to the fact that he was giving for the glory of God, and not for the praise of man in this life. He desired

God's praise in the Holy City of eternal glory. His church shall miss him as times rolls on, and there is not another to take his place.

His family and home were the supreme joys of his heart, and he loved the sweet rest, quiet and companionship that his home had in store for him when the toils of the busy day were ended. He may well be spoken of as a loving, affectionate and understanding husband, a kind and sympathetic father, and an ideal man in every respect.

We can truthfully say that he lived to serve, and he served while he lived. Just before he fell asleep to awake from his labors, he made several calls and had given aid and advice to those who were in the clutches of ill health.

To his wife and children, his father and brother and sister, and all the other relatives and loved ones, we extend the deepest sympathy that our hearts are capable of extending. Their grief is, in part, our grief. We join hearts and hand with them while we look through the clouds into the face of Him who conquered death, and we hear Him saying: "Fear not, I am the First and the Last. I am He that liveth and was dead; and behold, I am alive forever more, and have the keys of death and the grave." "I am the resurrection and the Life; he that believeth in me though he were dead, yet shall he live." "Lo, I am with you always." "Let not your heart be troubled . . . I will come again and receive you." In the dark hour of death Christ is our one supreme and sufficient refuge. He has tasted death for every man, and one day He is coming back to destroy death, and to gather His own to Himself.

We would not call our loved ones back to earth again even if we could. They have finished their task on earth, and have gone on to be with the Lord, and to rest from their labors. Dr. Walker lived in the spirit of Christ. As it was spoken of Christ: "Greater love hath no man than this, that he lay down his life for his friends;" even so may we

(Continued on Page 19)



## PRESIDENT'S PAGE



The New Year opened under promising conditions for the South Carolina Medical Association.

At the close of the fiscal year December 31, 1934, the membership roll had about returned to normal. The Treasurer reported the finances in a satisfactory condition. The Journal has suffered in common with most other State Journals and other magazines from a loss of advertising receipts during the depression. It is a source of gratification that the receipts are now improving. It has been necessary to limit somewhat the size of the Journal from time to time, but it is expected that the Journal will soon return to normal in this regard.

At this time all of the members of the Association are looking toward the annual meeting to be held at Florence, April 23, 24, 25. I am glad to report that the committee on Scientific Work has been very active and the program promises to be of unusual interest. The personnel of the Scientific Committee is Dr. W. R. Mead, Florence, Chairman, Dr. James McLeod, Florence, Dr. J. P. Price, Florence.

This committee together with the President and Secretary of the Association held a meeting at Hartsville on January 10 and completed many details of the coming annual meeting.

### OUR INVITED GUESTS

We are extremely fortunate this year because of the great distinction enjoyed by our guests. Their names are as follows: Dr. J. H. Stander, Professor of Obstetrics and Gynecology at Cornell University Medical School, New York; Dr. T. S. Fay, Professor of Neurological Surgery at Temple University, Philadelphia; Dr. W. B. Castle, Associate Professor of Medicine at Harvard Medical School, Boston, Mass.

### POST GRADUATE COURSES IN OBSTETRICS

I bespeak the loyal support of every doctor in South Carolina for the Post Graduate Courses in Obstetrics to be given under the auspices of the State Association by Dr. J. R. McCord, Professor of Obstetrics at Emory University. These lectures will begin at Anderson, April 15. They will be held in various sections of the State.

### PATHOLOGICAL CONFERENCE REPORTS

Beginning in February the clinico-pathological conference reports at the Medical College will appear in the Journal. These reports will be along the lines of the well known Cabot case histories. Dr. Kenneth M. Lynch will be the editor.

WILLIAM EGGLESTON.

## ORIGINAL ARTICLES

### Macrocytic Anemia

By Robert Wilson, Jr., M.D., Charleston, S. C.

The great strides made during the past decade in the knowledge and treatment of the anemias have emphasized the necessity for closer attention to exact diagnosis. In our older classifications, the anemias were arbitrarily divided into Primary and Secondary, but with increasing knowledge, the two groups were further divided and subdivided until such a maze of diagnostic possibilities were offered that the finding of the correct subgroup in which to place any particular case became a very difficult procedure. However, during the past few years, the pendulum has swung back in the direction of simplicity. Largely through the efforts of Wintrobe(1), mathematical formulae have been evolved expressing the ratios between the hemoglobin, red cell count, and volume index of the blood, which enable us to determine the relative size and hemoglobin content and concentration of the individual red cell. The various etiological factors involved in the production of these different manifestations of the blood have, to some extent, been ascertained, and therefore it is now possible through the use of these methods to arrive at a much clearer understanding of any particular case of anemia of obscure origin.

The Macrocytic Anemias, with which we are concerned today, comprise all of the anemias in which the average size and hemoglobin content of the red blood cells are greater than normal. The classic example of this type, of course, is Pernicious Anemia, the clinical picture of which is quite definite and needs no description. Anemia of this type is also found at times in Pellagra, in Sprue, and in chronic dietary deficiencies of certain types. Infection with the Fish Tapeworm, *Diphyllobothrium latum*, gives rise to a blood-picture of

the macrocytic type. "Pernicious Anemia of Pregnancy" has recently been studied by Strauss and Castle(2); there are reports(3) of a "Tropical Macrocytic Anemia" which is regarded as not at all uncommon in India, complicating pregnancy in a considerable proportion of cases, but occurring in non-pregnant individuals rather frequently. Finally, macrocytosis is sometimes the characteristic blood finding in cases of Aplastic Anemia. All cases may be said to have the "blood picture of Pernicious Anemia," but other clinical findings rule out the latter as a diagnostic possibility. However, there is probably one factor common to all cases, which will be considered after taking up the three cases to be reported.

#### Case Reports

The first case to be presented is that of a 48-year-old colored woman, who was sent to the Roper Hospital early in August, 1933, because of an infected hand of two weeks duration. Over the course of the previous eight months, she stated that she had had an intermittent diarrhea, characterized by the passage of a large number of watery stools, periods of intense diarrhea alternating with shorter periods of relative freedom from this symptom. At no time was any blood noted in the stools, nor did the patient think that there had been any unusual amount of mucus. During this time, she had been on a very poor diet, predominantly carbohydrate, with little meat, milk, or green vegetables. No other symptoms were noted, except for moderate loss of weight, and polydipsia of two years duration. There was no history of skin lesions having appeared on the hands or feet at any time in the past. Physical examination showed: Weight 100 lbs. The patient was rather emaciated, with dry, loose and wrinkled skin, giving evidence of moderate loss of weight. The mucous membranes were pale, dental caries present, the tongue normal. There was generalized glandular enlargement. The lungs were reported clear, the heart normal. No organs or masses

were felt in the abdomen. The extremities were negative on examination, except for a palmar abscess of the left hand, and there was no roughening or ulceration of the skin. No arteriosclerosis was noted. Blood pressure 136/86.

The patient was found to have rather severe Diabetes, with large amounts of sugar in the urine, and hyperglycemia, which required insulin for regulation. The infection of the hand was slow in subsiding, but after about two months stopped draining and gradually healed.

The examination of the blood, in which we are particularly interested, showed, on admission (August 5th):

Hemoglobin, 48 per cent (Sahli), 7.48 Grams 100 cc.

R. B. C., 2, 185,000.

Vol. per cent Cells, 24.8 per cent.

M. C. V., 111.8.

The Color Index was 1.14. A blood smear examined by the Halometer gave a reading which was interpreted as showing a decided increase in the average size of the red blood cells. The Gastric Analysis showed a reduction in acidity, Free Hydrochloric Acid being 5 degrees, Total Acidity 15 degrees.

The patient's diabetic condition made it impossible to give her an indiscriminate diet, but she was begun on one containing 47 grams of protein daily, with the addition of 1 pint of an aqueous extract of fresh liver, prepared according to the method of Castle and Bowie(4), one-half ounce of Brewer's Yeast twice daily, and Bud's Mass with Copper Arsenite, 15 grains, three times a day. Bismuth subcarbonate was given in addition to the measures outlined above, and the diarrhea was entirely relieved. After three weeks, the hemoglobin had risen to 73 per cent, the red cell count to 3,440,000, and continued steadily upward until Oct. 16th, when the hemoglobin was read at 94 per cent, with 4,490,000 red cells. The patient remained in the hospital until Dec. 21st, when she was discharged with instructions to continue her dietary treatment at home. Because of economic difficulties, this was impossible for her to carry out, and she returned for further diabetic regulation on March 19th. The hemoglobin had fallen to 68 per cent, the red cell count to 3,360,000. Physical findings in the

chest led to an X-ray examination, which disclosed definite evidence of Tuberculosis. The sputum was likewise positive, and after two weeks of downward progression, death took place on April 1st.

It is interesting to note, in the following examinations of the blood made at intervals, that at the time of the patient's first admission to the hospital, the hemoglobin was at its lowest level and the Mean Corpuscular Volume at its highest. With the rise in hemoglobin and total red cell count to normal, the M. C. V. likewise returned to normal limits. And on the patient's return after three months at home with inadequate treatment, the M. C. V. had again risen to a figure slightly above normal (102.2) simultaneously with the fall in hemoglobin and red cell count.

Pathological diagnosis at autopsy was Chronic Pulmonary Tuberculosis of the ulcerative type, with tuberculous pneumonia; fibrosis of the pancreas; central lobular necrosis of the liver. Other organs, including the intestines, showed no pathological lesions.

The next case is that of an 82-year-old white man, who had had intermittent attacks of diarrhea of a rather mild nature for two years previous to the onset of his final illness. These, however, were by no means particularly debilitating, and he was in fairly good health, despite his age, until November 1933, when a rather typical attack of Bronchopneumonia began. An examination of the blood at that time disclosed changes in the appearance of the red blood corpuscles, which led up to more complete study, after the patient had entirely recovered from the pulmonary infection, about ten days later. This showed (on Nov. 25th):

Hemoglobin, 68 per cent (Sahli), 10.6 Grams 100 cc.

R. B. C., 3,380,000.

Vol. per cent Cells, 36.39 per cent.

M. C. V., 107.6.

In the smear, the red cells showed moderate increase in size, some macrocytes, a few tailed forms, and moderate variation in size and shape. All cells appeared to be well-filled with hemoglobin. No nucleated red blood corpuscles were seen. The Color Index was 1.1. Reticulocyte count showed less than 0.3 per cent.



There was no increase in the bile pigment of the blood plasma. The white cell count and differential were normal, except for 10 per cent eosinophils, this being attributed to convalescence from pneumonia.

Other laboratory findings included three bacteriological examinations of the stools, in all of which *Giardia lamblia* were present in considerable numbers; no amoebae were found. The gastric analysis showed reduction in acidity, free HCl being 7 degrees, total acidity 25 degrees. The urine was negative on many occasions. An X-ray of the gastro-intestinal tract, taken in March 1933, had been reported as negative.

The patient's diarrhea was persistent for the entire time after the onset of the first attack of pneumonia, stools varying in number from 5 to 14 daily. Because of the mild anemia of the macrocytic type, he was started on Liver Extract by intramuscular injection, and received a total of twenty such injections, 2 cc each, between Nov. 28th and Dec. 23rd. After he had been given the first ten doses of Liver, a reexamination of the blood showed:

Hemoglobin, 76 per cent (Sahli), 11.85 Grams/100 cc.

R. B. C., 4,150,000.

Vol. per cent Cells, 37 per cent.

M. C. V., 89.0.

The course of treatment with Liver Extract had no apparent effect on the patient's diarrhea, but did make him feel somewhat better subjectively. The diarrhea responded to some extent to Paregoric and Bismuth, but because of its persistence, the possibility of *Giardia lamblia* having some part in its etiology, and the chance of its being helped by Emetine, a course of treatment with the hydrochloride of Emetine, given by hypodermic injection, was begun on Dec. 23rd and continued until Jan. 13, 1934. A total of 10 grains of the drug had been so administered in half-grain doses, when the development of a neuritis necessitated its discontinuance. A few days later the patient again developed Bronchopneumonia, with cough, fever, and definite signs of consolidation in the lungs; from this there was no chance of recovery and death took place on Jan. 23rd.

The third case is that of a 26-year-old white

man, who was admitted to the Roper Hospital on June 5th, 1933, with a story of swelling of the feet and ankles of three weeks duration. He had been in excellent health up to that time. Other symptoms included some shortness of breath on exertion, a poor appetite, and the patient's friends had told him that his color had become quite pale. The history was otherwise negative; he had no regular occupation, and had been exposed to no industrial hazards. Positive physical findings included pallor of the mucous membranes, a sallow complexion, a slight icteric tint to the skin, enlarged and chronically infected tonsils, a systolic murmur at the apex of the heart, and moderate pitting cedema of the feet and ankles.

Admission laboratory examinations (June 7th):

Hemoglobin, 22 per cent (Sahli), 3.45 Grams—100 cc.

R. B. C., 840,000.

Vol. per cent Cells, 11.81 per cent.

M. C. V., 140.0.

The Color Index was 1.37. In the smear, the red blood cells showed considerable variation in size and shape, and many macrocytes were present. The Halometric reading likewise indicated a considerable increase in the average size of the red cells. White cell counts varied from 3,700 to 5,100, later rising to 8,100. The differential counts were normal. Urinalysis negative, no urobilin present. There was no blood in the feces. Wassermann reaction negative. The Icteric Index was 5.8. Gastric analysis showed some reduction in acidity, with Free HCl of 7 degrees and total acidity of 23 degrees.

On admission to the hospital, the patient was placed on a high protein diet, with additional cooked liver. Bland's Mass, twenty grains three times daily, with Copper Arsenite and Strychnine, were also prescribed. A donor was obtained, and three days after entry 400 cc of whole blood given by transfusion. The patient was not entirely cooperative, did not take his diet at all well, but did manage to eat liver almost every day. Reticulocyte counts were done at intervals, and showed a rise from 2 per cent on June 10th to 6.3 per cent on June 16th, a definitely sub-maximal response. Repeated blood counts showed a gradual rise in Hemo-

globin content to 41 per cent, and R. B. C. to 2,680,000. A check-up on the Mean Corpuscular Volume of the red blood cells, however, showed no change, remaining at 140 two weeks after entry. Because of the patient's refusal to take his diet properly, Liver Extract was given by intramuscular injection, 2 cc daily being administered during the patient's last two weeks in the hospital. Practically no effect was noted from this change in the method of therapy, reticulocyte response reaching only 3.5 per cent and there being little change in the hemoglobin and red cell counts. The oedema of the feet persisted for about three weeks, but gradually diminished and had disappeared before discharge from the hospital. The patient felt a great deal better as a result of treatment, even though his blood was still quite low, and insisted on leaving the hospital against the advice of the attending staff on July 1st, 3 1-2 weeks after admission.

#### Discussion

While the three cases just presented differ from one another in some respects, all possess certain features in common. Although the degree of anemia showed considerable variation, macrocytosis was present in all instances. It is true in general that the degree of anemia and of macrocytosis run parallel, and as the hemoglobin content of the blood approaches normal, the more nearly normal does the average size of the red blood cells become, and this was borne out in the cases studied. Gastric analysis was performed in all cases, and in all showed considerable diminution in the amount of free hydrochloric acid present, as well as in total acidity. The discussion naturally turns to a consideration of the cause or causes of the anemia in our cases. Is the finding of a macrocytic anemia merely coincidental, or is there a common etiological factor, present in all? The first patient had definitely proven Pulmonary Tuberculosis, in addition to Diabetes, the former of which had probably been present for some time before a diagnosis was made. But the anemia usually associated with Tuberculosis, and with almost all chronic infections, is commonly "secondary" in type, with a color index below 1.0, small red blood cells and low hemoglobin concentration. In the second case, infestation with *Giardia lamblia* was noted, but

this intestinal parasite is regarded as non pathologic, and has not been reported as giving rise to anemia of any type. And in the third case, no cause whatsoever can be found to explain the degree of anemia. In all, therefore, an analysis of the blood-picture is necessary before we can arrive at any definite conclusions.

In order to reach a clear understanding of the mechanism of production of anemia in general, and of macrocytic anemia in particular, it is worth-while for a moment to consider the factors involved in the maintenance of the blood at its normal level. These are six in number:

1. Properly-functioning bone-marrow.
2. An "Intrinsic Factor" (Hormone) in the stomach contents.
3. An adequate diet, containing sufficient quantities of
  - a. Iron
  - b. Protein
  - c. The "Extrinsic Factor"
4. Proper absorption of the products of metabolism.
5. Integrity of the vascular channels, with absence of any opportunity for chronic blood loss.
6. Normal red blood cells (i. e. Hemolytic Jaundice).

It is only with the first four of these factors that we are immediately concerned; the anemias that result from the chronic loss of blood externally, or from the abnormally great destruction of faulty red blood corpuscles, are practically always of the microcytic hypochromic types. The classical example of macrocytic anemia, Pernicious Anemia, has been found (5) to result from the absence from the stomach contents of the so-called "Intrinsic Factor." In the normal individual, this factor interacts with the "Extrinsic Factor" contained in the diet to form some product of metabolism which, after absorption, is used by the bone-marrow in the elaboration of normally-sized red blood cells. It follows, therefore, that the lack of this necessary substance in the diet of the individual, or the failure of absorption of the product of their interaction, would give rise to a blood dyscrasia simulating the blood-picture of Pernicious Anemia, just the same as if the stomach factor were at fault.

If we now go back to a consideration of our



patients, it becomes clear just why this type of blood-picture should have developed. The first patient, the colored diabetic, had been on a very poor diet for some months previous to her admission to the hospital, and all this time had had considerable diarrhea as well. The presence of free hydrochloric acid in the stomach contents, even though in diminished amount, indicates that the "Intrinsic Factor" was not entirely absent, and rules out the possibility of a diagnosis of primary Pernicious Anemia. But even though some of the necessary metabolic product was most probably being elaborated in the stomach, its diminished amount (due to an insufficiency in the diet) was not enough, in the face of the intermittent diarrhea, to meet the demands of the bone-marrow, and the resultant macrocytic blood-picture was expressive of this deficiency. Although no conclusions can be drawn from the response of the patient to treatment, as she received iron and yeast as well as Liver Extract, it is most likely that the latter was largely responsible for the prompt and adequate rise of the hemoglobin and red cell count to normal limits. While the second patient had been taking a sufficient diet all along, persistent diarrhea operated so as to bring about approximately the same end-result. Response to treatment in this case bore out this supposition; although the total rise in hemoglobin was not very great, the initial level was much higher, and along with the increase in hemoglobin and red cell count came a prompt reduction in the average cell volume to normal. In the third case, a somewhat different clinical picture is presented. Even though there was reduced acidity of the stomach contents, and therefore possibly a reduction in the amount of the "Intrinsic Factor" present, the patient's blood-picture would have remained normal if there had been no disturbance of bone-marrow function. This case must be regarded as one of an Aplastic type of anemia—from what cause is unknown—but failure of response to any and all of the blood-stimulating drugs signifies that inadequacy of bone-marrow function was the underlying etiological factor.

The use of these methods for the determination of the average size of the red blood cells, by means of the halo test or with hematocrit readings, is essential in all but the most obvious cases of anemia if we are to be able to classify them in the light of the newer knowledge of the blood in all of its normal and pathological characteristics, if we are to be able to arrive at a correct etiological diagnosis, and if we are to direct our therapeutic procedures intelligently. A diagnosis of Pernicious Anemia, or of any of the related macrocytic anemias, points very definitely to the therapeutic indication for liver extract. The presence of abnormally large red cells in the blood stream is the way by which the body expresses the lack of one of the factors necessary to maintain the blood in its normal state. Liver extract supplies this deficiency, and when administered in sufficient amounts, corrects the abnormality of the blood. If we disregard this sign, or if we do not look for it, we are not giving our patients all that we should be able to offer them. On the other hand, if examination of the blood discloses no intimation of this deficiency, if all tests point against an increase in the average size of the red blood cells, there is no direct indication for the use of liver, and to prescribe it in such a case is economically wasteful, both because of the relatively high cost of the drug, and because while giving it we are apt to neglect other therapeutic measures that might otherwise hasten the recovery of the patient.

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## Cancer of the Cervix

*By O. D. Baxter, M.D., Sumter, S. C.*

Cancer of the cervix of the uterus can be cured in a majority of cases if treated early and thoroughly by radiation.

To treat early, the condition must of course be seen and diagnosed early. Routine examination of the cervix of all female patients during the cancer age, even though they have no symptoms, and the education of women to present themselves for examination seems to offer the greatest chance of survival. It is evident to those who have seen and treated many patients with this condition that, until some more effective method of dealing with carcinoma is discovered, prophylaxis and early treatment are the two most important factors in treating this disease successfully.

A number of factors lead the patient to neglect seeking medical advice early. Among the most common are the inherent fear of cancer and the common belief that it is incurable, the mildness of the symptoms and the fact that a discharge of some sort has probably been present for years, for cancer rarely develops upon a normal cervix. A slight alteration in the character of the leukorrhea may be overlooked or regarded as of no moment. Atypical bleeding is often attributed to menopausal disturbance. The chief reason, however, is probably the painless character of the symptoms. In point of fact, during the early stages of the disease the symptoms are few, mild, insignificant, or entirely absent.

Incomprehensible as it may seem, one of the chief reasons why physicians fail to recognize the condition is their failure to make a pelvic examination.

There has recently been developed an aid in the diagnosis of early cancer of the cervix that can be done by anyone, anywhere; namely, the use of Lugol's iodine solution (The Schiller Test). To make the test, place the patient in the lithotomy position, bladder empty, with the foot of the table slightly elevated. Introduce a vaginal speculum and expose the cervix and cleanse it and the upper vagina of the mucus and discharge and inspect the area carefully

under good illumination for comparison later. Instill into the vagina about half an ounce of Lugol's Solution and swab to insure that the solution is brought in contact with the entire vaginal cervix. In about a minute lower the table and remove the excess iodine with cotton. Now inspect with a good light.

The information obtained is the result of the work of Lahm, who showed that the normal superficial layers of the vaginal and cervical epithelium contain large quantities of glycogen, and therefore stain a deep mahogany brown with Lugol's solution. The cancer cell has no glycogen, and a loss of staining properties occurs in the earliest stages of cancer. Negative results, i. e. a uniform brown stain with no unstained areas, are a fairly positive indication that carcinoma is not present in the area which has been exposed to the iodine. Unstained areas, however, are not positive evidence that cancer is present. Simple erosions from which the investing epithelium has been denuded and erosion in the early stage of healing and covered with cuboidal epithelium do not stain. Hyperkeratosis, traumatic desquamation, or any benign lesion which has removed the normal superficial layers of the vaginal and cervical epithelium are iodine negative. In other words, iodine-negativity and carcinoma are not always identical. A negative iodine test then can only attract attention to the areas and indicate the location from which tissue should be collected for microscopic examination. The symptoms, vaginal examination and the iodine test are but presumptive evidence; in all really early cases, however, the court of final resort is the microscope, employed by a competent pathologist. Competent pathological examinations are available to every one in our State, and there is no excuse for this work being done by the inexperienced. The only flaw in this plan for 100 per cent early diagnosis is that the area of malignancy may not be included in the collected specimen. It requires some experience to collect the proper specimen, but the iodine test, if carefully applied, will be of inestimable value in pointing out the most suspicious areas. Carcinoma of the fundus and of the ovaries may cause abnormal bleeding and must be kept in mind when the cervix is normal and suggestive symptoms are present.

The most successful treatment for any disease is to prevent it. Unquestionably, non-malignant disease of the cervix, particularly the so-called erosions or chronic endocervicitis predispose to the development of cancer, and should be viewed with suspicion as a pre-cancerous lesion. Endocervicitis develops on an injured cervix. Repair of the lacerated cervix of the uterus at the time of injury seems to be a procedure that is almost entirely neglected. The treatment of the erosions or endo-cervicitis is not a technical or difficult procedure, and the results are most successful. Records show that cancer is practically eliminated in those patients whose cervixes have been cleaned up. As a matter of fact the prevalence of cancer can be greatly reduced by proper care of the non-malignant disease of the cervix. A study of the combined records of Hunner, Pemberton, Smith, Bland, Graves and others show that of more than 25,000 patients who were treated by surgery or cauterization for cervical lesions only 15 had developed cancer 10 years or more later. The same paper quotes statistics which reveal, that of 2255 cases with cancer of the cervix only 33 had received adequate treatment for chronic cervical lesions.

When the diagnosis is made early there might be some question as to the method of treatment. For the last ten years surgery has been practically discontinued by those who have treated many of these cases and have observed their results closely. Surgery is no longer used in the larger centers. It is possible that, as a result of earlier diagnosis, trachelotomy and radiation may be advisable in selected cases. However, because of the tendency to early metastasis treatment by radiation (i. e. radium and X-ray) is unquestionably the therapy of choice at the present time. The actual technic is not standardized. Different radiologists use different methods but the fundamentals must be the same. The most successful method depends upon a relatively small dose of radiation, heavily filtered, applied over a relatively long period of time. Any living cell, whether malignant or not is most radio-sensitive during certain stages of mitosis, or cell division. A given amount of radiation from radium or an X-ray tube can destroy any cell in the dividing stage and the adjacent adult cells show little or no

change. Because the cancer cell is dividing at a rather rapid rate, it can be killed by radiation without destroying its host. The treatment then is to apply radiation of sufficient amount to destroy the malignant growth and not the surrounding tissue, and no more. This sounds rather simple, but because of many factors it is, in many instances, almost impossible. For instance, almost any primary lesion of the skin, mouth, breast, or uterus that is found early can be destroyed by radiation or removed surgically, but if the adjacent lymphatics are involved, the problem is more complicated and often hopeless. Superficial lesions can be destroyed by the caustic or unfiltered rays, especially if the surrounding adjacent tissue is not essential for life. If, however, the rays must penetrate normal tissue to reach the malignant growth, again the problem becomes complicated.

The general condition of the patient is a factor of great importance. That one of the results of radiation is the development of cancer resistance or of a cancer fighting property in the surrounding normal tissue is a widely accepted theory. If the cancer host is below par, then this fighting property is lessened and may theoretically result in failure. Certainly, by experience we know that when the Hemoglobin is below 50 per cent, the patient is not going to stand radiation well and in my practice it has been necessary to interrupt the treatment in several instances. Inflammatory reaction in and around a malignancy, particularly of the cervix, lessens the chance of a cure. Inflamed tissue does not respond to radiation as well as when the area is clean. In fact, even when time appears to be a factor, it will pay to use antiseptics, etc. and clean up infected lesions. Therefore it is essential that the below par patient be given general treatment, building up her condition and increasing resistance, before radiation is attempted. It is also necessary that inflammation and infection be reduced to a minimum before radiation treatment is started.

The application or administration of any form of non-surgical therapy has as a basis the same dosage unit, or amount of the agent applied or administered. In radiation the physical unit is called the "r" unit. Another amount or unit is called the "Skin Erythema Dose."



The relations between the two are constant, provided all the factors of measurement are constant. The S. E. D. is the amount of radiation either from radium or an X-ray tube which will produce a definite tanning or bronzing of the skin of 80 per cent of the individuals exposed, the other 20 per cent showing no skin change. Cancer of the cervix requires about 10 S. E. D.'s to destroy the abnormal cells. How to apply this much radiation without destroying the skin and surrounding pelvic tissue and at the same time irradiate the lymphatic drainage from the involved area is the problem confronting the radiologist. It can be done but, not without a thorough knowledge of anatomy of the pelvis and of the fundamentals of the application of radiant energy. Ofttimes a great deal of ingenuity is necessary to properly apply the radium applicators, for many times it is impossible even to find the os or cervical canal. Especially is this true in the later stage of the disease.

Believing that a detail description of the technical application would be tedious and to some extent uninteresting, this discussion will only be concerned with the general idea of small amounts of radiant energy, heavily filtered, applied over a relatively long time.

To treat carcinoma of the cervix both radium and the Roentgen rays should be used unless we can be positive that there is no glandular involvement, when radium alone may be used. The radium is placed in tubes or capsules, inserted into the uterine canal, applied against the vaginal cervix and placed wide in the lateral fornices. Applicators are available to accomplish this. In the uterine canal the tube or capsule holding the radium should have a wall thickness of at least one millimeter of platinum or its equivalent, and those in the vagina should have a wall thickness of at least one and one half millimeters of platinum or its equivalent. From 60 to 70 mgm of radium element is all that is necessary to use. The exposure time should amount to at least 5000 mgm hours, that is, if 60 mgm of radium is used, it should be applied for more than 80 hours. Sixty mgm for 80 hours would be 4800 mgm hours. As much as 9000 mgm hours can be given safely if the thickness of the platinum wall of the applicators is increased one half to one mm more than the above.

In addition to radium every patient should have at least two series of X-ray deep therapy. The equipment should deliver full 200 thousand volts. The X-ray treatment should be given in divided doses, using at least three exposures to the S. E. D. Filters of at least one half mm of copper placed between the target and patient are essential. The trend is towards more filtering rather than less. The time necessary for adequate treatment is about three weeks, seven to ten days of which should be spent in a hospital.

If the diagnosis is made early and the patient is treated skillfully and thoroughly, what results do we expect to obtain? What can we tell the referring physician, the patient or her relatives as to her chance of being permanently relieved of the condition which is popularly considered incurable? The statement that more than 50 per cent will survive the disease five or more years can be honestly and conscientiously made. In a few of the larger clinics of Europe and America the records show that 75 per cent or more have lived beyond the five year period without return. The statistics showing five year cures of moderately and far advanced cancer of the cervix are very disappointing, being below 10 per cent, taking those of the world at large. The statistical comparison of the salvage ratio of early and late cancer of the cervix is worthy of our most earnest consideration. Diagnose cancer of the cervix early and save the patient.

In review we have tried to stress early diagnosis and have described the Schiller or iodine test in some detail, and we have tried to discuss briefly the fundamental principles on which the thorough and successful treatment of cancer must be based.

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WANTED: Position as laboratory technician. Graduate of Allen-Sandlin School of Laboratory, Louisville, Kentucky, and have had some post-graduate work. Would accept position in doctor's office. Best of personal references furnished. Miss Myrtle Eaddy, Leo, S. C.

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## Precancerous Lesions And Early Cancer

By William M. Sheridan, M.D., Spartanburg, S. C.

Ewing(1) says, "The term cancer includes a group of diseases and that no single cause for cancer has ever been found. It is not due to any microscopic or ultramicroscopic germ or parasite." The animal experiments of Maude Slye(1) have suggested that heredity plays a part in the causation of cancer. Some persons inherit an immunity and others a susceptibility to cancer. When cancer is present on both sides of the family, this hereditary tendency is more pronounced. Offspring of cancer families should marry into non-cancer families. Eugenics will thus aid in reducing the incidence of cancer. Although the exact cause of cancer is still unknown, it has been found that chronic infection and chronic irritation play an important role.

### *Skin*

Cancer of the skin usually develops in persons with thin, dry skins who are exposed to the sun, wind and cold. Farmers, carpenters, brick masons, laborers, and those who live out of doors most of the time are more apt to develop skin cancer than those who work indoors. The outer layer of the skin begins first to show thin, greasy scales. Later crusts develop which are called keratoses and are precancerous. After several months the crusts will drop off and the patient usually notices that a raw spot is present which bleeds easily. After a few days the crust reforms and drops off again. If the patient is observant, he will notice that the ulceration is larger. After a number of months the ulcer develops a hard border and is usually recognized as skin cancer. Application of cold cream or vaseline to the face and hands each night often prevents the formation of additional precancerous lesions.

Eye-glass frames which are not properly adjusted constantly irritate the skin of the nose, cheek, temple or auricle and sometimes cause cancer. It is important that these frames be properly adjusted so that no undue pressure or irritation will be produced on any part of the

skin. Warts and moles which are subject to continual irritation should be widely removed with the electric needle and excised. Daily cutting of warts or moles while shaving stimulates growth. Warts or moles which are rubbed by the hat band, brassiere, corset, waistband, or shoes, should be removed with the electric needle or excised. If there has been recent growth, x-ray and radium treatments should also be given. Black pigmented moles are very dangerous and should be widely removed.

Skin cancers may also begin as nodules. These nodules usually appear on the cheek and back of the hands and are much more serious than ulcerations. Skin cancers are usually readily curable by means of radiation. McKee(2) states that 97 per cent of skin cancers may be cured with x-rays and radium when treated early. These statistics have been corroborated by several thousand dermatologists and radiologists.

### *Mouth*

Pyorrhoea, abscessed teeth, tobacco (smoking or chewing) fillings, crowns, bridges, or plates with rough or sharp surfaces or margins produce thickening of the epithelial layer, leucoplakia, ulcerations, warty growths or fissures and are predisposing causes of cancer of the lip, inside of the cheek, tongue, and floor of the mouth.

### *Breast*

Multiple, discrete tumors of the breast are usually fibroadenomata. Dimpling of the skin and retraction of the nipple usually indicate carcinoma. Cancers of the breast are usually hard. Cysts sometimes fluctuate. A single lump in one breast in a woman over 20 years of age should be considered cancerous until proven otherwise. These lumps in the breast should be removed and examined microscopically. Fifty per cent of the cases with bleeding from the nipple are due to cancer of the ducts. Transillumination and x-ray films will aid in locating lesions of the breast which should be biopsied. Postoperative x-ray treatments have greatly increased the percentage of cures in cancer of the breast.

### *Urinary Tract*

The presence of blood in the urine indicates that careful cystoscopic examination and also

pyelograms should be made. All papillary tumors are potentially malignant. They should be destroyed by fulguration and the patient given deep therapy x-ray treatments to prevent their recurrence.

#### *Rectum*

Remove polypoid tumors. If there is bleeding, see that the patient is thoroughly examined with the sigmoidoscope. Do not assume that bleeding from the rectum is due to piles.

#### *Uterus*

A watery discharge from the vagina which soon develops an odor and a pinkish color, especially after intercourse, is the earliest symptom of cancer of the uterus. Bleeding between the menstrual periods or after the menopause appears later. These symptoms indicate bimanual, direct examination of the vagina and cervix with the speculum and dilatation and curettment of the uterus. If the cervix is eroded, a section should be removed. The scrapings and tissue should be examined microscopically by a competent pathologist. Many women have died from cancer of the cervix because they failed to have an examination, assuming that the bleeding was due to the change of life. Repair of the lacerations of the cervix following childbirth will aid in the prevention of cancer.

#### *Biopsy*

The response to radiation is a fairly accurate index as to whether the tumor is malignant. Highly malignant tumors, as a rule, disappear rapidly. However, a biopsy should be done in every case. Fearing operation, many patients delay seeing a physician until it is too late. If the tumor is on the surface, even these patients do not usually object to biopsy if you tell them that you wish to shave off a piece of tissue with a safety razor blade.

#### *Conclusions*

Any fissure, erosion, sore, ulceration or lump in any part of the body that persists longer than two months should be excised and examined microscopically. If malignancy is present, x-ray and radium treatments should also be given. A positive Wassermann does not mean that the lesion is syphilitic. It is unwise to tell a patient that these early lesions mean nothing. A delay of several months many times re-

sults in a fatal outcome. Periodic health examinations should reveal many precancerous conditions and early cancers. Prompt and efficient treatment of these lesions will do much to lower the ever increasing death rate from cancer.

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#### DISCUSSION

DR. HILLYER RUDISILL, JR., Charleston:

These are both extremely important and timely papers. We all realize that these meetings afford us an opportunity for both an increase in our scientific knowledge and for social enjoyment. If these papers are taken to heart and remembered, we shall all more than fulfill our duties of increasing our scientific knowledge and shall be able to enjoy the rest of the meeting with a perfectly clear conscience. We shall also be able to save the lives of many people.

There are a few things I should like to mention about Dr. Sheridan's paper, since I was scheduled to discuss that. The first thing I wish to speak about is malignancies of the skin. Dr. Sheridan mentioned exposure to wind, sunlight, etc. Here in this section of the country we have what is called sea-island skin. A person who has lived out-of-doors all his life has a dry skin and has not one skin cancer but many. People should be cautioned against undue exposure of the skin to sun and wind. This fad of getting tanned, so popular among young people, will wind up with skin cancer.

As to cancer of the mouth, Dr. Bloodgood has made a great point of keeping the mouth clean. It is apparently true that if the mouth is kept clean and the teeth kept in good condition there will be very little mouth cancer.

In the removal of warts and moles, I do not think electrocoagulation or electrosurgery should be used, nor x-ray. I think all should be widely excised.

In the last few years, malignancies of the bladder have been arrested or apparently cured by direct radium implants, implanted directly through suprapubic incision into the bladder.

I enjoyed Dr. Baxter's paper, also. I think the most important point, from anybody's standpoint, is the point of prophylaxis. While cancer of the cervix is a very satisfactory type of malignancy to treat with radium, it would be a lot more satisfactory if we did not have to treat it at all; and it can be prevented by cleaning up these lacerations, endocervical lesions, etc.



DR. KENNETH M. LYNCH, Charleston:

I am sorry I did not have the opportunity of hearing Dr. Sheridan's paper. This is a subject very close to my heart in everyday work. Although I did not hear his paper and have no knowledge of what he had to say about precancerous lesions, I do want to speak of the sense of that term, for I find it commonly misunderstood. When a condition is called a precancerous lesion, the idea is common that that necessarily results in the production of a carcinoma. It has no such meaning. It merely means that there are certain changes taking place in the tissues which are commonly seen previous to the development, or which result in the development, of cancer. It does not mean that there is cancer. If it is strictly true that there is a precancerous state which always leads to the production of cancer, we are unable to recognize it. It merely means that there are certain changes in the tissues, a state of chronic irritation, which may result in the development of cancer.

There are a few points I wish to emphasize in Dr. Baxter's paper. The first is his description of the use of Lugol's solution in determining absence of glycogen and consequent loss of staining properties. That is all that the Lugol's solution is good for. Don't have in mind that the application of Lugol's solution is going to make a diagnosis or eliminate a diagnosis of cancer of the cervix. All it does is show loss of surface epithelium, or not. That is present in cancer but more commonly present in other conditions than cancer, so it is not a diagnostic sign of cancer of the cervix.

I find it also a matter of some concern as to whether sections of tissue should be removed for microscopical examination and also as to the character of examinations to which they should be submitted. Carcinoma of the cervix is a preventable and a curable disease, as Dr. Baxter and Dr. Rudisill emphasized. It can be prevented by preventing the chronic infection of the cervix which produces it, and I want you to think more about chronic infection of the cervix than about injury in childbirth. It is not the injury which causes carcinoma but the chronic irritation following. Often cancers of the cervix can be cured in the early stages. In order to cure them, we must know whether they are present, or not. I have no fear about cutting into carcinoma of the cervix for the purpose of diagnosis. I am lukewarm about the matter of frozen sections at operation. A frozen section at operation is a matter of some stress and hurry. The section may not be taken so that it will show the proper field. A more deliberate study, which may occupy the period of a couple of days, will do no harm to the patient and may be a measure of assurance as to the outcome of the diagnosis. (I am, of course, speaking only of carcinoma of the cervix, at the moment. With all carcinoma, to deviate from the particular point, I am not fearful of taking sections for diagnosis; and I consider that, in the stage in which carcinoma can be cured, it is the only means of making a diag-

nosis. It has been shown that, in the short time necessary for making a proper diagnosis, there is no danger to the patient entailed in cutting into the lesion.

DR. J. R. ALLISON, Columbia:

The subject of cancer and its treatment is usually thoroughly discussed at most medical meetings. The two most important points of the subject are well discussed in these two papers; namely, early diagnosis and early treatment. There is nothing particularly new in the treatment of cancer. Methods have been refined, but adequate treatment still depends on early diagnosis and early treatment. The question of precancerous lesions has been discussed. This is a term applied to certain skin conditions that experience has taught us often become cancers after years of gradual change in characteristics. There is a growing tendency at the present time to believe that such lesions have always been cancers, but in a latent stage. Ordinary Basal-Cell skin cancers or Epitheliomas have been shown to have Prickle-Cell structures in ten per cent of the cases. It is impossible, therefore, in a consideration of skin lesions to be able to make a definite diagnosis from clinical appearances of the lesions. For instance, in Doctor Sheridan's paper, he spoke of treatment of Keratosis in a general way. There are many types of Keratosis, many of which require different lines of treatment depending upon the type.

Biopsy in skin lesions is very useful in certain cases. The ideal time to remove cancers and precancerous lesions is often at a stage where the lesion is so small that a biopsy is not practicable. This is the ideal, but where the lesion is large, a biopsy should be made. For example, a Keratosis on the lower lip should not be allowed to grow large enough to make a biopsy practicable.

DR. WILLIAM WESTON, Columbia:

There have been some observations made which might throw some light on the etiology of this very interesting study. Doughty in his investigations of the diets of the tribes of Arabia observed that in certain tribes neither cancer nor diseases of the eye existed. Later Sir Arbuthnot Lane called our attention to the fact that there is no cancer among the inhabitants around the Equator, and attributed this condition to the fact that the people eat natural foods. More recently Dr. McClendon was sent by the Rockefeller Institute to Japan, where he stayed a year investigating the diets of the Japanese people. He remarked in his report that there is no radium in Japan, from which we infer that cancer is not a problem in that country. We also note from his report that there is only one case of goiter in a million of population.

Dr. Beale's studies impress me as most interesting; and if subsequent investigations sustain his findings, he will have made a great contribution towards the solution of this problem. If I may I would like to



read the report of one case here. With reference to carcinoma of the epithelium, etc., Dr. Beal of Massachusetts has conducted a very interesting study with the use of insulin. "Following the leg ulcer I saw a huge cancer of the chest, both breasts, both axillae, involving the left arm in marked edema, and with two huge necrotic areas. This patient had been seen at one of the best clinics of the country and a fatal prognosis given, and no recommendation except the administration of narcotics to let her die comfortably. But the similarity of the two ulcerated areas in the carcinoma to the great leg ulcer I had recently seen recover, prompted me to use insulin in this case. Five units was given each day for two weeks; at the end of which time both necrotic areas were healed over and were dry; whereas, they had been moist, oozing serum. The whole growth was shrunken one half. Edema of the left arm was gone in less than three days."

DR. FLOYD D. ROGERS, Columbia:

I found out that Charleston is on time, this morning. I depended on your being a little bit late with this program and was surprised to find that you are on time; so I was not here to open the discussion on Dr. Baxter's paper.

As to the precancerous skin lesion, you have heard that we must make a definite diagnosis. Probably a biopsy might be good. Dr. Allison says not. There is a pretty good rule that the average practitioner can follow. If you have any small, discrete, scaling lesion on the skin that does not respond to the application of grease and to cleanliness, if it does not respond within three weeks, it has to be helped. Now, you may have a keratotic lesion that stays for years and nothing happens, and one morning the patient wakes up and the lesion has begun to grow and promptly grows into a definite carcinoma or epithelioma, or what not. So a good rule for the average practitioner to follow is that if you have any small, discrete skin lesion that has been scaling off, that does not get well under the application of soap and water and vaselin (or any other grease you might want to use), it has to be helped. When it comes to helping it, you can do it in any of several ways. You can excise the area, and the patient will be well. You can dessicate the area, and the patient will be well. Or you can use x-ray or radium. (I have reversed these in the order of their importance.) The surgical removal of a small skin lesion leaves a considerable scar—much more scar than dissection or x-ray or radium.

Any lesion on the lower lip, no matter how mild it might be, should not be observed over two weeks before something definite and drastic is done. The removal of a section from the lower lip for microscopic study should only be done if you remove sufficient to cure the lesion. Then the pathologist can study it at his leisure, and the man can be told that he had a carcinoma of the lip or an epithelioma of the lip, or whatever you might want to term it. Then

the patient should be observed over a long period of time for enlarged glands of the neck. If these appear, then if a piece is removed and it is determined that it is malignant, the man should have a wide dissection of the glands of the neck.

Often a patient will come in with a full-blown epithelioma and will tell this story: "You see this thing on my cheek? I have had that thing for three years, and Dr. John Doe told me never to bother it until it bothered me. It does not bother me now; I do not have a bit of pain, but about two weeks ago it bled right badly." That is a mistake we of the medical profession make; we tell people not to bother things until they bother them; and that is certainly a mistake with precancerous lesions. Now, they are not hard to handle; almost anybody can handle them; and we certainly ought to recognize them.

As to carcinoma of the cervix, I have been treating carcinoma of the cervix with radium now since 1919; and it is absolutely appalling to me to see the number of patients that are not only beyond surgery but beyond any help whatever. The patients will tell you they consulted a physician two years ago. About what? Because they were bleeding between menstrual periods or bleeding when past the menopause. What did the doctor say? That he wanted to give them some treatment, for which they would have to come to his office three times a week. What is the treatment? The treatment is some sort of injection. You go back to it, and you find that that patient has not had her cervix looked at. And the visualization of the cervix is an extremely important procedure. (Time called.)

DR. ROBERT B. TAFT, Charleston:

I have a set of slides that may interest you. These are not my own slides; I copied them a number of years ago from the Journal of Gynecology and Obstetrics. I am not arrogant enough to believe that all cases of carcinoma of the cervix respond as quickly as this, but a great many of them do.

DR. SHERIDAN, Closing the discussion on his part:

The main thing about the whole business is to see the patient early. If the patients do not know what the symptoms indicate, they will not present themselves for examination. I think it is a subject for education—not only the medical profession but the laity should be educated to what these symptoms mean. Most lay people maintain that because we have not found the cause of cancer we can not do anything for it; they maintain a hopeless attitude. The American Society for the Control of Cancer has done a great deal of work in cities. After a campaign in Baltimore, Dr. Bloodgood said that, instead of most of the cases presenting themselves for examination being advanced cancer of the breast, most of them were non-malignant. These people had been educated on the subject.

The most important thing, after getting the patients, is to examine them thoroughly. As Dr. Rogers

said, many patients are not examined. Patients with cancer of the rectum are treated for hemorrhoids or for something else and not examined. I saw one patient who had been in a hospital three months with a fractured hip. She did not have a bloody discharge but did have a serous discharge, which later developed a foul odor. She had had no examination. Of course, it is not handy to examine a patient with a broken hip, but it can be done, and in this case it might have saved her life.

The term "precancerous" is of course not a scientific term, but it is one that is in general use. As to keratoses, there are different types. For keratoses on an oily skin, use plenty of soap and water; on a dry skin, use vaseline. The treatment for either type is about the same. If you get a response to irradiation, you know that malignancy is already present; if you do not get a response, you know it is a simple piling up of epithelial cells, which can readily be destroyed with the electric needle.

It is a nice thing, of course, to get a biopsy in these precancerous lesions of the skin, but it is not always practicable.

If a lesion on the lip is large, I think it is a good thing to take off only a small layer. If it is small, remove the whole lesion. If you have a lesion the size of a walnut, it is not necessary to remove the whole lesion in order to obtain tissue for a biopsy.

DR. BAXTER, Closing the discussion on his part:

I want to thank Dr. Lynch, particularly, for his discussion of this paper of mine.

The conditions we do not know about we never see or find. It sounds foolish to talk to intelligent people and say that if we do not look for a condition we do not find it, but that seems to be the fundamental trouble with the early diagnosis of cancer.

I think the point has been brought out this morning that cancer can be cured and is cured. Cancer of the cervix, as Dr. Rudisill's display in the lobby shows, can be cured in seventy-five per cent of the cases if found early. Of course, if we do not find them they can not be cured; they go on into the incurable stage.

The point Dr. Lynch brought out about the Schiller test, or the iodine test, I think might be expressed a little differently. He said the only value of the test is in determining the area for biopsy. I think a negative test is very valuable. If the whole vaginal or cervical epithelium stains a mahogany brown, then certainly cancer or the other diseases which destroy the epithelium are not present. The value of the Schiller test is that it does indicate some area or the best area, to take the specimen. Another thing; if you do the Schiller test you are going to look at the cervix; you have to do it in order to make the test; and if you do that you are going to find some early cases of cancer and save some lives.

## NERVOUS AND MENTAL DISEASES

E. L. HORGER, M.D., STATE HOSPITAL, COLUMBIA, S. C.

### ALCOHOL—MENTAL DISORDERS

The effect of alcohol upon the nervous system is, from the beginning, that of a depressant. The stimulating or exhilarating effect produced by it when it is first used is brought about by the phenomena of paralysis; that is, in the early stages of its use the higher psychic centers are affected, which are largely inhibitive. Later the lower centers of the brain become paralyzed and if sufficient amount of alcohol be used, coma may result.

Alcohol acts as an etiological factor in bringing about various types of mental disorders. According to the classification of mental diseases there is a definite group spoken of as the alcoholic psychoses, which are delirium tremens, acute hallucinosis, chronic hallucinosis, Korsakow's psychosis, paranoid states, etc. In speaking of alcoholic psychoses one must be careful not to include drunkenness in its mild-

er forms, nor other types of mental disease which have alcoholism associated with them. It is very difficult to state how much alcohol or for how long a period its use is necessary to bring about a psychosis. It is recognized that certain individuals are predisposed to its effects. Especially is this true of those with an unstable mental make up.

In regard to statistics concerning institutions caring for the mentally sick, it is claimed that 12 per cent of the patients in these hospitals are there because of the effect of alcohol, which, directly or indirectly, has brought about their psychoses. Comparative figures according to the United States census bureau show that in 1910 alcoholic psychoses constituted 10 per cent of the total first admissions to institutions; in 1922, 3.7 per cent; and in 1930, 4.2 per cent. These percentages do not include the alcoholics without psychoses nor the



other psychoses that had alcoholism associated with them. In our own state institution, for the past five years, alcohol was the factor in bringing about the admission of 47 in 1929, 44 in 1930, 39 in 1931, 77 in 1932, and 47 in 1933—the statistics for 1933 cover a period of nine months—making a total of 254. From a diagnostic standpoint, of this number, 73 were definitely psychotic.

As an etiological factor alcohol also plays a prominent part in epilepsy. According to Muskens, it may break down the inherent resistance of the individual and "precipitate a fit where the patient has a predisposition to epilepsy. Alcohol used to excess . . . may induce such constitutional changes that epilepsy may result apart from predisposing causes." "Alcoholism in parents or grand-parents is a definite predisposing factor." Several cases are noted in which the causative factor of epilepsy in children was positively known to be alcoholic debauchery during conception. Even a small quantity of alcohol taken by a mother will sometimes cause her breast-fed child to develop fits, while the use of alcohol by a chronic epileptic will almost certainly produce fits.

Treadgold in his treatise on Mental Deficiency discusses at some length the effect of alcohol in producing amentia. He says that a pronounced family history of alcoholism "was

present in no less than 46.5 per cent of my cases. It is to be remarked, however, that in five-sixths of these there was a definite neuropathic predisposition also, whilst in most of the remainder there was a history of other morbid influences." The great discrepancy in figures compiled by others studying aments "together with the fact that a history of alcoholism is unusually accompanied by a definite history of insanity, epilepsy, or other neuropathic conditions, suggests that its action is more often contributory than directly causal." The conclusion of Dr. Wigglesworth is "that alcoholism in the progenitors is a fruitful cause of idiocy, mental defectives, insanity, and other nervous diseases in the off spring."

After consideration of the part played by alcohol it can easily be seen that mental disorders would be greatly reduced by abstinence. Because of the social conditions under which people live and the economic distress of the times, the use of alcohol will continue; therefore the best that can be done is to endeavor to improve the environment, to instruct the people as to the affects, and to bring moderation in its use. It is very seldom if ever that a person normal in every way will drink a sufficient amount of alcohol to bring about a psychosis. It is usually the unstable, the nervy person, the individual with some peculiarity in his make-up that becomes addicted to the use of alcohol.

Members of the Association contemplating reading papers before the State Association at Florence, April 23, 24, 25, should send in their titles at once to the State Secretary in order that the State Committee may give due consideration to them.

The annual meeting of the Marlboro County Medical Society was held at Bennettsville on the evening of January 11. The attendance was good and the program as usual of a high order. This is one of the outstanding meetings of the year in medical circles in South Carolina.

Dr. Walter L. Bierring, President of the American Medical Association, will visit Charleston on February ninth and will address the Medical Society there at that time.

The Spartanburg County Medical Society will hold the first meeting of the year on Monday evening January 28. Dr. Oscar Wilson is the new President and Dr. D. L. Smith, Jr., the new Secretary.

Dr. O. B. Mayer of Columbia is the new President of the Columbia Medical Society. Dr. Ben Rubinowitz continues as Secretary and Dr. Tom Dotterer as Treasurer.

Dr. B. C. Bishop is the new President of the Greenville County Medical Society, Dr. William McNeil Carpenter holding over as Secretary and Dr. J. W. Jervy, Jr., continuing as Treasurer. This Society held a meeting and banquet in January in honor of a distinguished Orthopedic Surgeon of Boston.

The South Carolina Society of Ophthalmology and Otolaryngology will meet at The Columbia Hotel February 2, 1935. Among those who will appear on the program are the following: Dr. E. A. Hines of Seneca, Secretary S. C. Medical Association; Dr. Roderick McDonald, Dr. W. M. Carpenter, Dr. W. R. McWhorter. Dr. R. Lucas of Florence is the President and Dr. J. W. Jervy, Jr., of Greenville is the Secretary.



## TRIBUTE TO DR. ROSSIE R. WALKER

(Continued from Page 3)

truthfully say that Dr. Walker laid down his life for his friends. He lived nobly, heroically and sacrificially in that he sacrificed his own welfare for the welfare of those whom he served.

*A Man and God*

They walked and talked—a man and God;  
A fragrance lingered where they trod,  
A music circled as they spoke  
And over them a glory broke.

They talked and walked, down many years.  
The way was called the vale of tears;  
But he who walked with God received  
Such comfort that he little grieved.

And walking thus, and talking so,  
The man and God did onward go,  
Until they reached a secret spot—  
God took him, and the man was not.  
Rev. W. Fred Hedgepath.

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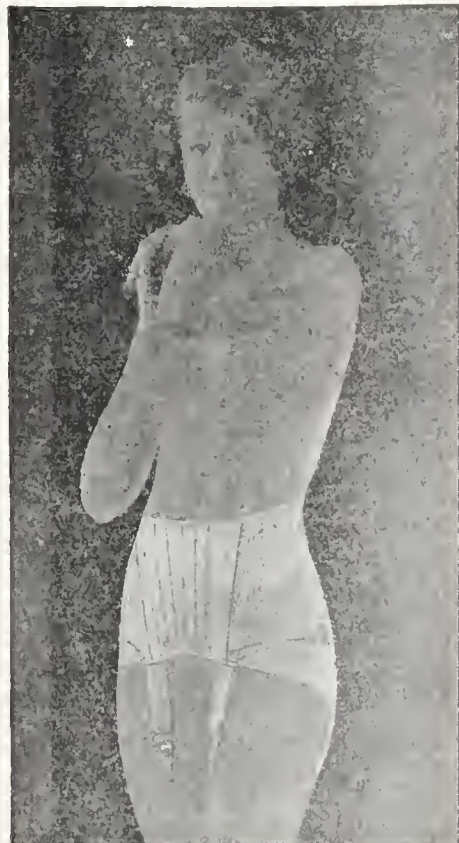
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# THE JOURNAL

of the

## South Carolina Medical Association

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## EDITORIAL

### EPOCH MEETING HOUSE OF DELE- GATES AMERICAN MEDICAL ASSOCIATION CHICAGO

The delegates, Dr. J. H. Cannon of Charleston and Dr. E. A. Hines of Seneca have just returned from the special meeting of the House of Delegates of the A. M. A. and have brought with them the first draft of the resolutions adopted there. This is the second meeting in special session of the House of Delegates in the history of the A. M. A. The first one was held during the crisis of the World War and this call was deemed another crisis of transcendent importance. The report of the meeting published herewith was adopted by a unanimous vote of the 161 delegates present. A resolution was adopted also that this report be given the widest possible publicity. It is urged that every doctor in South Carolina read this report carefully and do everything in his power to see that every one who should know about it has the opportunity. The officers of

the South Carolina Medical Association will of course speedily undertake to carry out the spirit of the House of Delegates of the American Medical Association in its special meeting to the letter.

### REPORT OF THE REFERENCE COM- MITTEE SPECIAL SESSION HOUSE OF DELEGATES

February 15 and 16, 1935

Your reference committee, believing that regimentation of the medical profession and lay control of medical practice will be fatal to medical progress and inevitably lower the quality of medical service now available to the American people, condemns unreservedly all propaganda, legislation or political manipulation leading to these ends.

Your reference committee has given careful consideration to the record by the Board of Trustees of the previous actions of this House of Delegates concerning sickness insurance and



organized medical care and to the account of the measures taken by the Board of Trustees and the officials of the Association to present this point of view to the government and to the people.

The American Medical Association, embracing in its membership some 100,000 of the physicians of the United States, is by far the largest medical organization in this country. The House of Delegates would point out that the American Medical Association is the only medical organization open to all reputable physicians and established on truly democratic principles, and that this House of Delegates, as constituted, is the only body truly representative of the medical profession.

The House of Delegates commends the Board of Trustees and the officers of the Association for their efforts in presenting correctly, maintaining and promoting the policies and principles, heretofore established by this body.

The primary considerations of the physicians constituting the American Medical Association are the welfare of the people, the preservation of their health and their care in sickness, the advancement of medical science, the improvement of medical care, and the provision of adequate medical service to all the people. These physicians are the only body in the United States qualified by experience and training to guide and suitably control plans for the provision of medical care. The fact that the quality of medical service to the people of the United States today is better than that of any other country in the world is evidence of the extent to which the American medical profession has fulfilled its obligations.

The House of Delegates of the American Medical Association reaffirms its opposition to all forms of compulsory sickness insurance whether administered by the Federal government, the governments of the individual states or by any individual industry, community or similar body. It reaffirms, also, its encouragement to local medical organizations to establish plans for the provision of adequate medical service for all of the people, adjusted to present economic conditions, by voluntary budgeting to meet the costs of illness.

The medical profession has given of its utmost to the American people, not only in this

but in every previous emergency. It has never required compulsion but has always volunteered its services in anticipation of their need.

The Committee on Economic Security, appointed by the President of the United States, presented in a preliminary report to Congress on January 17 eleven principles which that Committee considered fundamental to a proposed plan of compulsory health insurance. The House of Delegates is glad to recognize that some of the fundamental considerations for an adequate, reliable and safe medical service established by the medical profession through years of experience in medical practice are found by the Committee to be essential to its own plans.

However, so many inconsistencies and incompatibilities are apparent in the report of the President's Committee on Economic Security thus far presented that many more facts and details are necessary for a proper consideration.

The House of Delegates recognizes the necessity under conditions of emergency for federal aid in meeting basic needs of the indigent; it deprecates, however, any provision whereby federal subsidies for medical services are administered and controlled by a lay bureau. While the desirability of adequate medical service for crippled children and for the preservation of child and maternal health is beyond question, the House of Delegates deplores and protests those sections of the Wagner Bill which place in the Children's Bureau of the Department of Labor the responsibility for the administration of funds for these purposes.

The House of Delegates condemns as pernicious that section of the Wagner Bill which creates a social insurance board without specification of the character of its personnel to administer functions essentially medical in character and demanding technical knowledge not available to those without medical training.

The so-called Epstein Bill, proposed by the American Association for Social Security now being promoted with propaganda in the individual states, is a vicious, deceptive, dangerous and demoralizing measure. An analysis of this proposed law has been published by the American Medical Association. It introduces such hazardous principles as multiple taxation, inordinate costs, extravagant admin-

istration and an inevitable trend toward social and financial bankruptcy.

The committee has studied this matter from a broad standpoint, considering many plans submitted by the Bureau of Medical Economics as well as those conveyed in resolutions from the floor of the House of Delegates. It reiterates the fact that there is no model plan which is a cure-all for the social ills any more than there is a panacea for the physical ills that affect mankind. There are now more than 150 plans for medical service undergoing study and trial in various communities in the United States. Your Bureau of Medical Economics has studied these plans and is now ready and willing to advise medical societies in the creation and operation of such plans. The plans developed by the Bureau of Medical Economics will serve the people of the community in the prevention of disease, the maintenance of health and with curative care in illness. They must at the same time meet apparent economic factors and protect the public welfare by safeguarding to the medical profession the functions of control of medical standards and the continued advancement of medical educational requirements. They must not destroy that initiative which is vital to the highest type of medical service.

In the establishment of all such plans, county medical societies must be guided by the ten fundamental principles adopted by this House of Delegates at the annual session in June 1934. The House of Delegates would again emphasize particularly the necessity for separate provision for hospital facilities and the physician's services. Payment for medical service, whether by prepayment plans, installment purchase or so-called voluntary hospital insurance plans, must hold, as absolutely distinct, remuneration for hospital care on the one hand and the individual, personal, scientific ministrations of the physician on the other.

Your Reference Committee Suggests that the Board of Trustees request the Bureau of Medical Economics to study further the plans now existing and such as may develop, with special reference to the way in which they meet the needs of their communities, to the costs of operation, to the quality of service rendered, the effects of such service on the medical pro-

fession, the applicability to rural, village, urban and industrial population, and to develop for presentation at the meeting of the American Medical Association in June model skeleton plans adapted to the needs of populations of various types.

(Signed) Dr. Harry H. Wilson, Chairman,  
California  
Dr. Warren F. Draper, Virginia.  
Dr. E. F. Cody, Massachusetts.  
Dr. E. H. Carey, Texas.  
Dr. N. B. Van Etten, New York.  
Dr. F. S. Crockett, Indiana.  
Dr. W. F. Braasch, Minnesota.

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#### DEATH OF DR. G. A. NEUFFER GREAT LOSS TO ORGANIZED MEDICINE

The death of Dr. Neuffer on January 2 removed from the rolls of the South Carolina Medical Association one of the most faithful and outstanding members. Dr. Neuffer early became imbued with the great benefits to be derived by the physician from his membership in the County and State Association. He accepted the duties therein and responded to every call to the limit of his ability to the day of his death. It was fitting that the many organizations medical, civic, and religious should honor such a leader in many ways. Early in his career Dr. Neuffer was elected to office in medical circles in South Carolina. He made a notable record as Councilor of the Third District and was a guiding spirit in the Council itself for a number of years, being accorded the Chairmanship at one time. Following this splendid service to organized medicine Dr. Neuffer was elected President of the Association and served in that office most acceptably. He did not stop there, however, for he was ever to be seen at nearly all the meetings of medical societies with which he was connected, and they were numerous within and without the State. Dr. Neuffer was a trustee of the Medical College of the State of South Carolina, and he delighted to serve his Alma Mater in this capacity. Dr. Neuffer was the friend of the young doctor, and at every medical meeting he was surrounded by them. He was keen of intellect and forward looking in medicine. He never seemed to grow old though he was beyond three score



and ten at his death. He will be greatly missed at our annual gatherings, particularly. He took an active part in the proceedings of the House of Delegates at the Charleston meeting in 1934, and was constantly in his seat at the meetings of the House as an Ex-President of the Association.

#### DEATH OF DR. FRANK DURHAM

The tragic death of Dr. Durham as a result of being struck down by an automobile while crossing a street brought keen sorrow to his numerous friends in all parts of the State. Dr. Durham was a pioneer in his specialty of Gastro-enterology and Proctology in South Carolina, or in the entire South for that matter. He served as Associate Editor of this Department in the Journal at one time. In fact he was the first Editor of this Department. Dr. Durham had served the State Medical Association in numerous capacities and always with fidelity. He had been President of the Columbia Medical Society. He was one of the most genial members of the Association and added a charm by his engaging personality to every circle in which he moved.

#### THE WORKMAN'S COMPENSATION BILL

A copy of the medical section of the Workman's Compensation Bill which has been introduced into the Legislature will be sent to the Secretaries of all County Societies for the purpose of information and action thereon by the Societies in the event that the bill as it now stands is not satisfactory. Communications about this or any other legislation should be sent to Dr. R. G. Doughty of Columbia, Chairman of the Committee on Legislation of the State Medical Association.

#### RIDGE MEDICAL SOCIETY

The Ridge Medical Society held its regular meeting Monday night, the seventeenth of December at the usual meeting place but with a smaller attendance than usual.

Our visitors were: Drs. J. E. Boone of the State Hospital, S. E. Harmon, President-Elect of our

State Medical Society and E. W. Barron of Columbia.

Various matters pertaining to our local society were freely discussed by our visitors as well as our members.

Dr. W. P. Timmerman reported two unusual cases of fever, etc., with petechiae one of which died. This elicited considerable discussion but not unanimous opinions.

Dr. King reported three cases of black spider bites one in a white girl, another in a white boy and another in a negro boy.

All of them recovered.

Dr. Frontis reported great improvement in a patient which he exhibited at a previous meeting.

Dr. J. E. Boone read an interesting and instructive paper on diuretics and the treatment of urinary derangements.

Dr. S. E. Harmon made an instructive address on maternal morbidity and emphasized the necessity of proper and frequent examinations of the pregnant women.

Supper was served in The Rutland Hotel.

Owing to the recent death of Mrs. W. P. Timmerman's mother, Mrs. J. C. Swygert and of the impending death of her father Mr. J. C. Swygert of Peak who died the next day after our meeting, the Ladies Auxiliary met with Mrs. W. W. King where it was delightfully entertained.

W. W. King, M. D.,

Acting President.

W. P. Timmerman, M. D.,

Secretary.

#### MEETING COLUMBIA MEDICAL SOCIETY

At Crystal Room, Columbia Hotel, Monday, January 14, 1935, 8:30 P. M.

##### *Regular Scientific Meeting*

1. Thirty-five Years' Experience in Handling Injured People. By Dr. S. E. Harmon.

2. Fracture of the Hip Joint (Intra-capsular), A new method of skeletal fixation. By A. T. Moore.

O. B. Mayer, M. D., President.

Benj. Rubinowitz, M.D., Secretary.

#### PUBLISHER'S STATEMENT OF CIRCULATION

This is to certify that the average circulation per issue of The Journal of the South Carolina Medical Association for the six months period July 1st to and including December 31st, 1934, was as follows:

Copies sold—834.

Copies distributed free—101.

Total—935.

Signed E. A. Hines, M. D.

Subscribed to and sworn before me on this 11 day of Feb. 1935.

W. W. Burley.

(Notary Seal).

## ORIGINAL ARTICLES

### The Diagnostic Significance of The Visual Fields

*By David St. Pierre Asbill, M.D., F.A.C.S.,  
Columbia, S. C.*

The field of vision for an eye is that portion of space which the fixed eye can see. The visual fields may be examined by the confrontation method, by the tangent screen, and by the perimeter.

For rough estimates the confrontation method is useful, but for most purposes a perimeter of tangent screen, or both, are essential. Of all perimeters, of which there are many, the new Ferree-Rand Perimeter with Tangent Screen, and accessories, is so far superior that it stands in a class by itself. The many exclusive advantages of this instrument cannot be enumerated here, but those interested are referred to the works of Ferree and Rand of Johns Hopkins, (See bibliography), and to 'Principles and Practice of Perimetry' by Dr. L. C. Peter, Professor of Ophthalmology in the Graduate School of the University of Pennsylvania.

The great importance of proper technique in taking visual fields is urgently stressed. The reason why proper technique is emphasized is obvious when one knows that diagnostically valuable early field changes are often slight and easily overlooked by careless and improper methods. Conversely, correctly taken visual fields often establish an early diagnosis and make early, effectual treatment and reliable prognosis possible.

The average normal fields for form and colors under seven (7) foot-candles illumination, and other standard conditions of the New Ferree-Rand Perimeter are given in a diagram.

The pathologic changes which may occur in the visual fields are of two kinds: (1) Scotomata, or areas in the field of diminution or complete loss of vision; (2) Changes in the

shape and size of the form and color fields.

Some of the diseases and conditions in which the visual fields may be diagnostically significant are:

#### (I) Intraocular affections

Choroiditis

Day Blindness

Night blindness

Retinal changes in

Syphilis

Nephritis

Arteriosclerosis

Leukemia

Hodgkins Disease

Solar and Electric Retinitis

Retinitis Pigmentosa

Detachment of the Retina

Commotio Retinae

Traumatic Anesthesia of the Retina

Traumatic hole in the Macula

Rupture of the Choroid and Retina

Embolism and Thrombosis of the central artery of the Retina.

Thrombosis of Retinal Veins

Posthemorrhagic Amblyopia

Coloboma of the Retina and Choroid

Coloboma of the Optic Nerve

Coloboma of the Macula

Medulated Nerve Fibres

Wounds of the Choroid and Retina

Atrophy of the Retina

Papillitis

Papilledema or choked disc

Acute and Chronic Glaucoma

#### (II) Diseases of the Optic Nerve Proper

Acute Retrobulbar Optic Neuritis

Toxic Amblyopia

Accessory Nasal Sinusitis

Tumors of the Optic Nerve

Wounds of the Optic Nerve

Fracture of bone at the Optic Foramen

Primary Optic Nerve Atrophy

Tabes Dorsalis



- Paresis
- Multiple Sclerosis
- Embolism and Thrombosis of the Central Retinal Artery
- Secondary Optic Atrophy
- Postneuritic or consecutive Optic Nerve Atrophy
- Leber's Disease
- Optic Nerve Atrophy following Retinal and Choroidal diseases
- (III) Diseases Affecting the Optic Chiasm
- Pituitary Tumors
- Distended Third Ventricle from any cause
- Tumors of the Craniopharyngeal Pouch
- Cerebral and Cerebellar Tumors
- Pressure of Internal Carotids in Arteriosclerosis and Brain Tumors
- Basal Meningitis (especially Syphilitic)
- Fracture of the skull
- Pituitary Enlargement in Pregnancy
- Nasopharyngeal Fibromas
- (IV) Diseases of the Optic Tracts and Primary Optic Centers
- Lateral Geniculate Body Pathology
- Anterior Corpus Quadrigeminum Pathology
- Tail of the Thalamus (Pulvinar) Pathology
- (V) Diseases of the Optic Radiations and the Visual Cortex
- Tumors, Abscesses, Haemorrhages, Cysts, Encephalitis, Aneurysms, Embolism and Thrombosis, of Cerebral Vessels
- (VI) Functional Nervous Diseases
- Hysteria
- Neurasthenia
- Scintillating Scotoma of Migraine
- Amblyopia Ex Anopsia

Time limitation prevents consideration here of the field characteristics in the above named conditions which, however, should be kept in mind.

Generally speaking, the visual fields are valuable, in conjunction with other findings,

(1) In determining the side of a brain lesion. An interesting example of this is the Foster Kennedy Syndrome which is diagnostic of

basal lesions of the frontal lobe: "A true retrobulbar neuritis with the formation of a central scotoma and primary optic atrophy on the side of the lesion, together with a concomitant papilledema in the opposite side."

(2) In determining the level of certain brain lesions. An example is the sparing of the macula characteristic of lesions above the primary optic centers and especially emphasized in disease of the visual cortex.

(3) Certain features of the visual fields are characteristic in determining the location and nature of eye, optic nerve, optic chiasm, optic tract, optic centers (primary), and cortical visual area lesions.

Some symptoms which indicate the taking of visual fields are:

(1) Generally speaking, the visual fields should be taken in all suspected instances of the previously named general, neurological, vascular, and ophthalmological conditions in which field studies may add to the certainty of, or positively establish the diagnosis.

(2) Persistent headache.

(3) Inability to read clearly nearby with properly correcting lenses when the refractive media of the eye are clear.

(4) Inability to see in certain directions. This may cause the patient to collide with objects which happen to lie in the defective portion of his field as he approaches them.

(5) Complete loss of vision in one eye; or, complete loss of vision in one eye and partial loss in the other; or, partial loss of vision in both eyes, not due entirely to a refractive error or to a local inflammatory or traumatic lesion anterior to the retina.

The interpretation of the visual fields for diagnostic purposes requires knowledge of the characteristics of the fields in the various conditions in which experience has proved their value. Essential, also, is familiarity with the anatomy, physiology, and pathology of the eye, optic nerve, optic chiasm, optic tracts, primary optic centers, optic radiations and visual cortex, as well as the structures in close or remote relation to all of the parts named, where the closely or remotely related structures, when diseased, are capable of causing directly or indirectly, changes in the visual pathways.

The practical diagnostic value of the visual

fields has long been recognized and utilized in leading medical centers. With refinement of instruments and technique involved the modern perimeter gives results far more valuable than was possible with the older equipment.

Like all diagnostic aids, the visual fields must be considered in conjunction with the clinical history, physical examination, laboratory findings, Roentgenological and other studies which may be necessary. It is often desirable to repeat field studies at intervals which will depend on circumstances. Early rational treatment depends, naturally, on early diagnosis. The visual fields have furnished early diagnostic and differential diagnostic data of importance in certain eye, brain, and general diseases. In this way visual field studies have often contributed to, and will continue to promote, the saving of sight and life.

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## DISCUSSION

Pierre G. Jenkins, Charleston:

It is difficult to decide which phase of the subject of visual field changes should be brought out in any one particular in view of the wide scope of such a subject. Therefore, I will speak in rather general terms, reemphasizing the importance of diagnostic tests not only in ophthalmology but in general medicine.

As L. C. Peter has said, "By use of the ophthalmoscope the observer examines and studies directly and indirectly changes which may take place in the media, the retina choroid and sclera. Some of these changes are macroscopical and, therefore, open to direct in-

spection, while others are microscopical and are so minute as to escape observation by the use of the ophthalmoscope. It is in the latter group of cases that a study of the projected field of vision is of particular value. Furthermore, gross fundus and media changes observed by the ophthalmoscope are confirmed and amplified by a visual field test. In a study of the disease of the optic nerve only gross changes such as marked atrophy may be observed by the ophthalmoscope. However, when the visual pathway is diseased above the primary optic centers and the atrophy does not manifest itself in the nerve head, and in certain retrobulbar intoxications the ophthalmoscope is not of great aid, relatively speaking. It may be, therefore, that the visual field test is a valuable aid in the diagnosing of the diseases of the visual pathway posterior to the eyeball."

Testing field of vision is, therefore, indispensably associated with the subjective examination of the eye in the same way in which ophthalmoscopy is with the objective. Traquair has grouped the conditions in which testing the field of vision is of value as follows:

1. Those in which the media are clear and the fundus oculi normal.
2. Those in which ophthalmoscopic evidence is available but requires amplification and explanation.
3. Those in which the media are partly obscured making ophthalmoscopic examination impossible or inconclusive, and in which disease of the retina or nerve path is suspected or should be excluded.

Under the first group are especially those cases in connection with disturbances of the optic nerve or its pathways in the brain. A case illustrative of this was that of the boy seven years old, seen by me on April 2nd. with a history of having recovered from an attack of measles three weeks previously. Three days before I saw him, he had noticed that his vision was failing in both eyes. Examination revealed that he had a vision in the right eye 8/200 and in the left 20/200. There was no change seen in the fundus. A visual field test was done and it was found that the form fields in each eye were markedly reduced. There was an absolute central scotoma in each eye and all color fields were absent. It was felt that these findings indicated the presence of an affection of the visual pathways probably posterior to the chiasm of a toxic nature and probably related in some way to his recent acute infectious disease. This case points out the additional fact of the value of visual field testing not only as regards diagnosis but as regards prognosis.

This is borne out by the fact that subsequent field

tests on this patient since putting him on appropriate treatment, have shown widening of the form fields but the visual acuity remains practically the same as on the first examination. Therefore, with the improvement in the field changes it is reasonable to feel that if this improvement continues in the course of time the visual acuity might also show improvement. The significance of not only the diagnostic and prognostic value of this procedure was foreseen by Berry who wrote in 1886, "It is evident that there are many points of diagnostic improvement to be gathered from an examination of the field. But there can be little doubt that in the thorough examination of the relative as well as absolute functional activity of all points of the retina we possess a means of immense value in the localization of intracranial disease. But it is not merely as a method of diagnosis that this examination deserves attention. In many cases it affords the most delicate means of ascertaining the course taken by a disease, especially when of intracranial origin."

I want to say that I thoroughly enjoyed Dr. Asbill's paper, and especially his slides, which showed a very remarkable variety of the different diseases in which we observe visual field changes.

Dr. E. W. Carpenter, Greenville:

Just a word of appreciation and commendation, for nothing more could be said which would add to this paper. It is compact and complete, and it shows a masterly understanding of the subject. I want to say that the average practicing ophthalmologist is not fitted, is not trained, to do the work the Doctor has set before you. The younger men who are coming up have been trained intensively in the appreciation and interpretation of the findings of these field defects. They are most valuable, and we can not get along without them. The general practitioner ought to be more or less familiar with them, and the committee on selection of papers is to be commended for putting this into the program. I wish to say that it takes infinite pains and patience and time to outline these fields, and to have them done carefully we ought to have trained technicians to outline these field defects and we should do the interpretation for the brain surgeon.

Dr. Asbill, closing the discussion:

I wish to thank the gentlemen for their discussion. I feel that their discussion has been very kind, and I feel also that their remarks have added very much to the value of my paper.

I thank you.



## The Present Status of the Radiologist in Treatment of Breast Cancer

By J. P. Rousseau, M.D., Winston-Salem, N. C.

I wish to preface the following remarks in regard to radiation treatment of breast cancer with the statement that there is nothing new in this paper, nor do I claim any of the ideas contained in this paper to be original with me. What I have to say is obtained from review of American literature of articles published by our leading radiologists such as Pfahler, Portman, Quick, Lee, Evans, May, Bloodgood, Soiland, and others.

The brief time in preparing this paper has not permitted me to index the above references.

The treatment of cancer of the breast is a problem that concerns not only every practitioner of medicine, but every individual. Cancer stands second only to heart disease as a cause of death, and cancer of the breast occupies third place as to site of frequency. Any method having any merit in the treatment of this disease, should therefore be seriously considered when outlining a plan of treating breast cancer.

Today surgery and irradiation are our two main methods of treating cancer, and should only be used singly or conjointly after careful consultation with the family physician, surgeon, pathologist and radiologist, if the best interest of the patient is to be served.

Treatment of malignant tumors with roentgen and radium rays has reached the point today where it is possible to state with some assurance that certain tumors will respond favorably to the action of these agents and that others will not. For example, the basal cell and squamous cell epidermoids of the skin, lip, oral cavity, tonsil, larynx and uterus, the embryonic carcinomas of the testes, the hypernephromas and certain sarcomas are known to possess a relatively high degree of radiosensitivity. On the other hand, carcinomas of the oesophagus, stomach, colon and urinary bladder are known to be radio-resistant, and up until now but little has been accomplished by

radiation treatment in this group of cases.

Breast carcinoma may be said to possess about the same degree of radio-sensitivity as do the squamous cell cancers. Some of the important factors known to determine the response of a malignant tumor to radiation are as follows: First; Radiosensitivity of the tumor cells, which may to a certain extent be determined by microscopic examination. We know today that the very cellular anaplastic undifferentiated and highly vascular tumors are the most malignant and the most radiosensitive, whereas the more differentiated desmoplastic tumors associated with the production of considerable fibrous tissue are less highly malignant and more radioresistant. This method of prediction of the sensitivity of a tumor is of value but subject to error. It is well known that sections taken from one part of a tumor may show the features of high malignancy and sensitivity, whereas sections taken of the same tumor from other parts will show just the opposite. For practical purposes it is essential that there be a difference in the tolerance of the cancer cells and the normal tissues harboring the tumor to permit the deliverance of a lethal dose of radiation to the cancer uniformly and at the same time preserve the integrity of the overlying skin and surrounding normal structures. Second: The accessibility of the tumor is another important factor in the treatment. It will determine the amount of radiation that may be delivered to the tumor. The proximity of a cancer to vital structures definitely limits the amount of radiation that may safely be given. Third: The extent of the disease is another important factor. Very large bulky carcinoma limits the ability of radiation to destroy the cancer cells in all its parts, because it is impossible to deliver the amount of radiation necessary without damage to healthy tissue and, too, it is often not possible to irradiate large tumors adequately and uniformly. Fourth: Certain tumors are so highly malignant that wide spread dissemination and distant metastasis have already doomed the patient before attention is called to the existence of the local lesion. The end results, therefore, in treating cancer of the breast are materially affected by the type of cancer cells, the rapidity of growth, the degree of malignancy, the radiosensitivity,

the presence or absence of metastasis, the regions involved, the duration of the disease, the age of the patient, the presence or absence of complicating diseases and the general state of health of the afflicted patient.

*Diagnosis of breast cancer:* In regard to the diagnosis of cancer of the breast, I feel that the radiologist can be of distinct aid and should be accorded the distinction of being a medical consultant along with the family physician, the surgeon and the pathologist. Radiologists cannot hope to attain this prominent role, however, unless they are willing to keep pace with the newer methods of clinical diagnoses and learn the symptoms and signs of cancer of the breast, and at least know something of the gross and microscopic pathology of breast tumors. If they will do this the opinion of the radiologist will be respected and any suggestions he may offer in regard to treatment will carry more weight. We can always be of help in determining the extent of the disease, the presence or absence of metastasis to the chest or skeletal system by a careful radiographic study of the lungs and bones. These regions should always be explored with the x-ray before operation is done. The clinical diagnostic evidence of breast cancer may be absent, yet cancer may exist. On the other hand one or many of the following symptoms and signs of cancer of the breast may be present which are listed in their order of frequency and importance:

1. Single or multiple nodularity in the breast, usually not painful. The most frequent first symptoms, is more often a single painless lump, but may be mutiple and painful.
2. Loss of fat and increase of fibrous tissue which alters the normal contour of the breast. Interruption of the arc, of the circle of the breast.
3. Fixation and dimpling of the overlying skin, giving rise to the so-called pig skin or orange peel skin.
4. Retraction of the nipple.
5. Reddening of the skin over the nodule, or skin ulceration.
6. The nodule is hard, not fluctuant or elastic to touch.
7. Bloody discharge from the nipple. (50 percent being due to cancer.) (Adair)

8. Ulceration or eczematous areas in the nipple
9. Enlargement or shrinkage of the breast.
10. Swelling of the arm.
11. Lump in the neck or axilla.
12. Pain in the arm.
13. Cough.
14. Loss of weight.
15. Neuralgic pains in chest and neck.
16. Pain in the back.

The presence of one or a group of these signs and symptoms should cause a strong suspicion of cancer, or lead to the positive diagnosis of clinical cancer. If the clinical evidence above mentioned is insufficient on which to make a positive diagnosis, transillumination of the breast should be done and is of distinct value, though not conclusive. In doubtful cases, the intelligent use of the punch or aspiration biopsy may make the diagnosis. This procedure, however, requires the opinion of an expert pathologist and close cooperation between the clinician and the pathologist. If, after these tests have been made, doubt still exists, exploratory operation, with immediate frozen sections should be done. If there is still doubt from study of the frozen sections, the lesion is more likely to be benign. The wound should be cauterized, the incision closed and roentgen therapy given during the interval necessary for the preparation and study of permanent paraffin sections. The radiologist should also be familiar with grouping and classification of breast cancer. The classification of Steinhall is the one generally accepted in American and European clinics, which is as follows: Group No. 1; Growth is confined to the breast with no clinical, microscopic or radiographic evidence of metastasis, and is definitely operable. Group 2: Cases of definite metastasis to the axilla, fixation to the pectoral muscles and showing involvement of the skin lymphatics, doubtfully operable. Group 3: Cases with or without axillary nodes, but with definite metastasis to distant parts of the body, as supraclavicular nodes, chest, mediastinum and bones; definitely inoperable. Group 4: Should include the postoperative, recurrent breast cancers which may in turn be divided into (A) cases of local recurrence only and operable and (B) cases, with or without local recurrences but with wide-



ly disseminated metastatic carcinoma, and inoperable. The first essential, therefore, in the treatment of cancer of the breast is the correct diagnosis and the proper evaluation of the above factors. The next essential is to determine and outline the best plan of treatment after consultation with the family physician, surgeon, pathologist and radiologist. In the early Steinhall group 1 and group 2, operable and doubtfully operable cancers of the breast, I am convinced that a thorough course of preoperative roentgen therapy should be given in every case. It is also important that this treatment be given with an exact technique and with as meticulous care as is any major operation. As radiologists, we are convinced of its value and know that it is possible to accomplish the following changes in the tumor: First; In the highly malignant radiosensitive cancers, the entire tumor along with its axillary involvement is often made to completely disappear. In such cases, where there is a rapid and marked response to radiation, indicating a high degree of malignancy and radiosensitivity, in which type surgery meets with most of its failures, I am of the opinion that such cases should not be subjected to operation at all, but that treatment be continued with radiation alone. Second: In the less sensitive group of breast cancer, preoperative radiation will destroy many of the more sensitive cells, devitalize the more resistant cells and at the same time exert a restraining influence on the tumor by an indirect action known to develop in normal tissue as a result of radiation. It has definitely been shown that such changes occur in radiated cancer of the breast examined microscopically at the time of the operation and by animal experimentation. The value of this procedure is furthermore demonstrated clinically by the fact that post operative recurrences and distant metastases are much less frequent and occur much later than in patients who have had no preoperative treatment. Statistics from leading American Radiologists such as Pfahler, Portman, Soiland, Christie, Quick, Lee, Evans, May and others, and from the clinics of Wintz and Keynes in Europe should be sufficient to convince the most skeptical of the value of preoperative treatments, yet today, many surgeons will object to preoperative radiation of breast cancer on the ground that the procedure

causes an unnecessary delay in the operation, during which time they claim the cancer may continue to grow, extend locally or metastasize. These men are either unwilling to admit a value for a procedure which they may think a competitor of surgery, or else have been observing cases in which radiation treatment is incompletely and improperly given. We may today assume, and rightly so, that nothing but good can come of a carefully planned and properly executed preoperative course of roentgen therapy in primary operable cancer. The technique which I am at the present employing is 200 P. K. V., 50 centimeter distance,  $1\frac{1}{2}$  mm. Copper and 1 Al. filters, 20 M. A., with an output of 40 r units per minute measured in air; multiple ports of entry are used, following as nearly as possible the tangential three field method of Holfielder and May. The total dose is between 2000 and 2500 r units 3-5 S.E.D. to each of the three fields given fractionally in doses of 200 r units daily, or every other day, over a period of three or four weeks time. The general condition of the patient is watched closely, special attention being paid to the nourishment, weight, blood picture and skin reactions. If untoward symptoms arise, the treatment may have to be interrupted or altered to suit the individual case. I believe that it is best to carry out the operation six weeks from date of last treatment. Ample time should be allowed to obtain all the possible benefits from the course of treatment, and I have seen regression of the tumor continue for a period of six to eight weeks. As to the postoperative radiation of breast cancer, which is the treatment most widely used, I feel that the benefits that accrue, are less than from preoperative treatments. It should be employed in all cases, and given with the same exactness and attention to detail as is the preoperative treatment. Its use is based on the assumption that if radium and roentgen rays have the ability to kill the more sensitive cancer cells, that they will also have the ability to prevent recurrences after operation, by devitalizing the viable tumor cells which might have survived the preoperative treatment or escaped the surgical excision. The best plan of this treatment is as follows:

Postoperative treatment should begin at the time of operation before the skin wound is clos-

ed, and consists of implantation of highly filtered radium element needles, using 1, 2 or 3 mg. of radium in platinum needles with filtration equivalent to 5/10 mm. platinum with 1.33 mg. radium per each running centimeter of needle length. These needles are placed as nearly as possible after the method of Keynes of the St. Bartholomew Hospital in London. The needle being placed obliquely in the first, second, third and fourth innerspaces parasternally, 1 centimeter apart beneath the clavicle and along the attachment of the pectoralis major muscles and left in place for seven to nine days. As soon as the patient is out of the hospital and the incision healed, a postoperative series of 200 K. V. roentgen therapy is again given externally, using the saturation method of Dr. Pfahler, or its modification, the Coutard technique.

I know of no better way at present to emphasize the value of radiation treatment than to quote from leading surgeons and radiologists in charge of our best clinics. While often misleading and confusing and at times even erroneous from one cause or another the following facts are well substantiated by study of statistical reports: First; The primary operable breast cancers, group I, treated by radiation only because of refusal of the patient to have an operation or because of poor general condition and extreme age of the patient, 81 to 100 per cent five year recoveries have been obtained by Soiland, Pfahler, Keynes, Quick and May. In this same group of cases the best surgical reports show only an average of 70 per cent five year recoveries. Second: Most cancers of the breast have progressed beyond the group I, or operable stage, when first seen and are doubtfully operable. In this group surgery alone shows only 24.5 per cent five year recoveries, while in a similar group treated by combined surgery and radiation there were 37 per cent five year recoveries. Dr. Pfahler in his large series of cases showed 46.5 per cent five year recoveries in these doubtfully operable cases, or a gain of 90 per cent in five year recoveries when radiation and surgery were combined. He also shows that in cases with no treatment at all 24 per cent will survive the three year period. If complete operation is done, 29 per cent live three years, and with combined surgery and radiation 66 per cent will live three years. From these

facts it seems, therefore, that with skillful surgery combined with proper pre and postoperative radiation, the patient's chances are nearly doubled. This accumulated experience of expert radiologists certainly justifies the extension of the status of radiation treatment in breast cancer to include the routine pre and postoperative roentgen therapy of all cases. An outstanding fact is that 70 per cent of all breast cancers operated on without radiation treatment are dead at the end of five years. This fact is obtained from reports of the best surgical clinics in the world. In the face of such a gloomy picture from surgery it seems justifiable to press further the use of radiation treatment since its worth has already been proven and accepted, based on the results obtained in postoperative recurrent, metastatic and inoperable breast cancer.

Before closing, I wish to review briefly the salient features of radiation treatment in a large and important group of breast cancers including the primary, inoperable, the postoperative recurrent and metastatic cases. In this group radiation alone is of any value with the possible exception of the Blair Bell lead therapy, still in the experimental stage and of doubtful value. By proper radiation in these cases it is possible to cure a few of these otherwise hopeless patients, markedly prolong life in others and to palliate the distressing symptoms in all. Most of you, I am sure, have seen extensive primary inoperable cancer, local recurrent carcinomatous ulceration of the chest wall, skin pulmonary and bone metastases disappear and remain free of symptoms for months or years with proper radiation. In most of these cases it is not possible to effect a permanent-cure, but in the majority, I believe it is possible to effect a marked regression of the tumor, prolonged growth restraint and prolongation of life with freedom from symptoms. The following method is in my opinion the best plan of procedure in treating these cases. The primary inoperable cancers without distant metastasis but with extensive involvement of the breast, axillary and supraclavicular involvement, should be given a complete course of roentgen therapy using multiple ports, to cover adequately all the involved areas. Six to eight weeks following the roentgen treatments any



residual tumor left in the breast, should be implanted with highly filtered radium element needles after the method of Keynes in London. Following this, further external radiation to the axilla and neck will depend on the integrity of the skin, care being taken at all times to prevent late x-ray sequelae. Metastatic lesions in the bones and lungs are treated with external roentgen radiation alone, giving the maximum dose through as many cross fire fields as possible by the saturation method of Pfahler. In regard to the use of radium, I am convinced that its use in conjunction with external roentgen therapy is of marked value. It should be used in small quantities of highly filtered radium element needles and distributed uniformly throughout residual tumor masses in the breast or in the nodes. It is of more value locally because of its more intense local action on cancer cells and should be used for this purpose only. The roentgen rays should be used for their wider and deeper effects. Recent progress in the use of roentgen rays by higher voltage and heavier filtration may eventually supplant the use of radium, but until more definite reports are available I believe we should continue to use radium needles interstitially in the tumor for its more intense local action after preroentgen therapy is completed. An advantage of the radium element needles over the use of gold implants or radon seed, is that the radiation from these needles is of equal intensity throughout the time of radiation, whereas with the radon, the maximum dosage is obtained within the first few days, the intensity decreasing proportionately each day. The second advantage of the needles is that the radium salt is equally distributed throughout the length of the needle which is much longer than the small seed and, therefore, it is much easier to uniformly radiate a large tumor with the needles than with the small seed.

## The Use of Some Common Drugs in Urology

By James E. Boone, M.D., Urologist, South Carolina State Hospital, Columbia, S. C.

In presenting this paper I am going to tell

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you nothing new or original but only try to refresh your memory as to the use of a few well known drugs, which I hope will be of interest and practical use to every physician.

It would be impossible to discuss every drug that is used in connection with the G. U. tract, therefore, I am going to limit myself to a few of the main ones.

### *Urinary Antiseptics:*

Urotropin (Formin). The ammonium salt of formaldehyd has but one proven physiological effect. It liberates formalin in acid solution, i. e. in the stomach and in the urine. As a result of the irritating properties of formalin the toxic effect is felt in the stomach, kidney and bladder. The desired therapeutic effect is antiseptics of the urine, and this will vary in proportion to the concentration of the formalin in the urine which in turn will depend upon the acidity and the dilution of the urine and the amount of drug administered.

The required theoretical concentration is 1 to 30,000. It is customary to give the drug in conjunction with sodium acid phosphate (gr. 7 1-2 to 30). Recently the efficiency of this acidifier has been denied and the present fashion is to administer ammonium chlorid in the same dose. Some believe it is better to give the acidifier before meals and the urotropin 2 hours after meals.

There are some conditions for which urotropin should not be given, and if administered, will considerably aggravate the disease, such as tuberculosis, elusive ulcer, urethritis, prostatitis.

The drug has but two uses (1) prophylaxis and cure of acute infections—(2) the control of chronic infections.

It is of use as a prophylactic to prevent the so called urethral chill following the passage of a sound or cystoscope. It has never been shown that its use before or after operations is justified.

To control beginning pyelitis it is practically specific. For a chronic pyelitis it has very little value, if any at all.

This is the ideal antiseptic for tabetic patients or any type of paralytic bladder in which a catheter is used constantly.

Irritation may be expected in any case where

the bladder is emptied frequently because of inflammatory conditions.

Intravenous urotropin has a definite place in medicine. In some cases the response has been beyond expectations, in others somewhat disappointing. However, the results obtained warrant its continued use. I believe it hastens the passing of ureteral stones. Recently I have had two cases of ureteral stones which remained stationary for over two weeks. After the administration of urotropin intravenously the stones were passed, one in twenty four hours, the other in fifty two hours. (Acidifiers were given by mouth.)

#### *Hexylresorcinol:*

Here we have an antiseptic working on a different principle, it does not require acidity but concentration of the urine, and part of its antiseptic effect is derived from its power to reduce the surface tension of the urine.

It was introduced with high hopes and vigorous claims of urinary antisepsis. These hopes have not been realized. In my hands it has been of very little value. Some authorities even consider it a dangerous drug to use at the time of operation because the restriction of fluid may threaten the patient's life. It is said to have its unique qualities. It is the one urinary antiseptic which attacks the urea splitting cocci.

After supra-pubic operations where there are encrusted ulcers or very foul urine it may be used locally in conjunction with mercurochrome with excellent results.

One must take into consideration not only the antiseptics but the *Sedatives*.

Quoting one author—"I feel confident that mercurochrome, pyridium, acriflavine and methylene—blue by mouth—have no value beyond the impression they make upon the patient's mind. If they did not color the patient's urine they would not color his thoughts."

If salol, the benzoates, the borates, etc., have any antiseptic value it is so slight as to be negligible.

#### *Balsamics:*

Unquestionably they do something to the urine which renders it relatively soothing—like caprokol they have little value if diluted. If the patient with an inflamed and irritated bladder has sound kidneys, many of the balsamics will soothe the irritation, thereby dis-

tinctly helping to control the infection whether it is due to gonococcus, tuberculosis or other bacteria. Every practitioner has his favorite balsamic preparations.

The pure oil in capsules is just as efficacious. The synthetic balsamics are not recommended. When giving sandalwood oil an over dose not only disturbs the digestion but will also occasion a severe backache (renal congestion). This should be kept in mind.

#### *Alkalies:*

Alkalies have long been employed to reduce the acidity of the urine. The aim is to keep the urine as nearly neutral as possible; an important point to remember is that excessive alkalinity is as objectionable as excessive acidity. The use of litmus paper will relieve any doubt about this.

Sodium bicarb or sodium citrate is as good as any alkali, and I do not believe can be improved upon.

#### *Acidification:*

Both alkalization and acidification of the urine are employed for the mere purpose of changing the reaction of that fluid and rendering it a less happy medium for the growth of bacteria that are flourishing in it. The best means should be diet. It is claimed that meat, eggs and grain products are notable acidifiers, while other vegetables, notably roots, are all alkaliniers. The benzoates and sodium acid phosphate are used for this purpose.

The most efficacious drug is ammonium chlorid from 7 1-2 to 30 grains t. i. d.

#### *Local Antiseptics:*

I shall attempt a brief discussion of only those with which I am familiar.

*Silver Nitrate:* This is the most generally used antiseptic for applications to the kidney pelvis—up to 1 per cent; to the bladder—1 to 1000 and 1 to 20,000; to the post urethra—1 to 20,000 to 2 per cent. Urethroscopic applications 10 to 50 per cent. I have never used silver nitrate in the anterior urethra because leading authorities condemn its use there.

Its value is due rather more to its astringent effect than to its actual destruction of bacteria. It seems to heal a sore spot whether it be a granulation upon the skin or a pyelitis or a cystitis. To my mind silver nitrate is the best local antiseptic in use at the present time but it



must be handled with great care and precaution as some patients are very sensitive to this chemical.

For sexual stimulation nothing can equal silver nitrate applications or instillations in the posterior urethra.

*Potassium Permanganate*: 1 to 6,000 and 1 to 3,000. It is a mild astringent, slightly antiseptic. It is the first choice in the treatment of acute anterior urethritis. It controls acute manifestation nicely but does not shorten the duration of the disease. Some authorities seem to think it lengthens the course of a chronic post urethritis.

*Boric Acid*: The best way to use this chemical is to give the patient a pound of the crystals with the knowledge that no solution he can make from this will be so strong as to do him any harm and the good he will derive from its use about the same.

*Protargol*: 1-200 prophylactic 1-400 treatment. It is ideal for prophylactic against gonorrhea and in the repressive treatment of g. c. It is relatively non astringent, rather penetrating, has a high laboratory bactericidal property.

*Albargin*: Has the same properties as protargol; and is used in about half the strength. These two antiseptics are at times irritating to the mucosa.

*Argyrol and Neo-Silvol* (10 per cent): Both very mild, soothing and slightly antiseptic. An important point to remember is that distilled water should be used in the preparation of a solution of these drugs—and that a fresh solution should be made up every other day. If these solutions are allowed to stand any length of time an irritating substance is formed which some patients cannot tolerate. I have never seen a bad reaction from a freshly prepared solution.

*Acriflavine*: This dye is now made under the name of neutral acriflavine and is relatively free from the hydrochloric acid which caused strictures of the urethra without causing pain. The neutral acriflavine has a tendency to cause ulcers without exciting pain. For irrigating urethra 1-4000 is plenty strong, not over twice a day. In mild infections it is excellent; in severe infections it is of no great value. It is of value in washing out wounds in order to

prevent infection from contents from the bladder or kidney. Remember to make the solution fresh every day.

*Mercurochrome*: Intravenously I have seldom used this. One leading urologist says "It has shot its bolt." The uncertainty of its action, the lack of any scientific foundation for its use and the deaths it has caused by acute mercurial poisoning, have condemned it. I do not agree with that statement but feel that great caution should be exercised. As a local urinary antiseptic it has great value. It is an admirable wound cleansing agent after urologic operation.

It is not useful in the treatment of gonorrhea and at times the irritation to some individuals is so excessive as to make the use of mercurochrome contra-indicated.

For bladder instillations begin with a few drops of a 1-200 solution which may be increased to a 2 per cent solution.

*Olco-Gomcnol*: This is the most soothing oil I have ever used in the bladder and urethra. Frequency and tenesmus caused by the passage of instruments or any inflammation about the trigone is almost instantly relieved by instilling from 2 to 10 c. c. There is nothing curative about this oil; it is purely symptomatic relief which is extremely effective.

*Hydrochloric Acid in Treatment of Urological Conditions* (Courtney W. Shopshire—Birmingham, Alabama.)

1-1500 solution, 10 c. c intravenously every day for one week or from one to three days according to the reaction of the patient. It will increase the red and white blood cells and hemoglobin. He has used it with startling results in the pre-operative preparation of trans urethral prostatic resection. There have been no primary nor delayed hemorrhages, nor shock, and no post operative infections. He has obtained satisfactory results in the treatment of acute and chronic gonorrhea, urethritis, prostatitis and seminal vesiculitis and rheumatism without any other treatment being used. It is necessary that general massage be carried out with this treatment. He states there is absolutely no reaction, danger or ill effects from the intravenous administration of hydrochloric acid. He has given several thousand injections without a single bad reaction or ill effect.

I am using this drug for the above conditions but have no opinion about it as I have not observed its use long enough.

#### References

Pharmacopeia of the United States.  
United States Dispensatory.

Practice of Pharmacy—Remington.

Urology—Keyes.

G-U Surgery—Martin—Thomas—Moorehead.

Journal Southwestern Branch Society of American Urology Association.

## WOMAN'S AUXILIARY

### SOUTH CAROLINA MEDICAL ASSOCIATION

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#### TWO NEW COUNTY AUXILIARIES FORMED

I am very happy to report 2 new county auxiliaries this year.

The last one formed was Florence County, where Dr. F. H. McLeod, Chairman of the Advisory Council of the Woman's Auxiliary, at the request of Mrs. C. P. Corn, State President, called the doctors' wives together for an organization. Twenty-two ladies met, and Mrs. O. T. Finklea of Florence was elected President and Mrs. Frank Davenport of Timmons-ville, Secretary and Treasurer. They are already making plans for the Convention, April 24, when they will be hostesses for the State Auxiliary.

The combined counties of Colleton and Beaufort organized to form one auxiliary and at their January meeting had a large representation and elected the following officers:

President—Mrs. Carroll Brown, Jr., Walterboro, S. C.

Vice Pres.—Mrs. W. B. Ryan, Beaufort, S. C.

Treasurer—Mrs. W. A. Black.

Secretary—Mrs. W. A. Carrigan.

Mrs. C. P. Corn, President.

#### RIDGE MEDICAL SOCIETY

The Ridge Medical Society met the fifteenth of October, 7:30 P. M., with a fair attendance of members and three visitors, Drs. Waters and W. B. Timmerman of Johnston and Dr. T. H. Symmes of St. Matthews.

Dr. D. B. Frontis exhibited a case of fatty enlargement of thighs, buttocks and abdomen and reported another similar case.

This case elicited discussion from most of those present.

Dr. W. P. Timmerman reported a case of a young lady who had symptoms at first which simulated malaria, later typhoid and which ended fatally. This was ably discussed by Drs. Wm. Tim-

merman, W. W. King, Walker, Symmes and Frontis.

Dr. R. H. Timmerman read a paper on diuretics and blenorrhagics.

Dr. E. P. Taylor reported a case of fainting in which a diuretic instead of stimulant was given due to wrong label on bottle.

The result was excellent but his descriptions, etc., were amusing.

Dr. Symmes after expressing his pleasure at begin with us read an interesting paper on influenza and its causes, modes of infection, treatment, etc.

His address was discussed by Drs. Asbill, Ridgell, King and Wise and W. P. Timmerman.

Supper was served in The Rutland Hotel.

W. P. Timmerman, Sec'y.



## PATHOLOGICAL CONFERENCE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

### ABSTRACT 279, JANUARY 11, 1935

Student Salley (presenting case record):

A Negro female, age 45 years, admitted Nov. 14, 1934, died Dec. 7th.

On 11-2-34 patient began to note difficulty in voiding, passing only a few drops of urine on straining. Lower abdomen became somewhat distended. No blood in urine, no pain on urination. Some numbness and heaviness of the left leg was noted on the same day, followed a few hours later by complete inability to move leg. On 11-10, the right leg began to get weak and on admission can only move the right leg "a very little." Patient has had some pain in her back for several years, especially worse when working. Pain in back dull and aching in character. Family history negative. Two children died a few days after birth, cause unknown. No living children. Review of the systems reveals only occasional constipation and nocturia. Menses regular but prolonged, associated with back pains. Diet adequate.

Physical: An emaciated negress, estimated weight 110 lbs. Temp. 99.6, Pulse 100, Resp. 22. Skin scaly about arms. Eyes, ears, nose negative. Tongue coated, teeth in fair condition. No palpable lymph glands. Chest: Apparently clear, altho adhesive strapping across back prevented careful examination of lung bases. Heart: Appears to be normal, possibly slight displacement to the right. Abdomen: tender to deep palpation over both kidneys. Mass felt in bladder region, no other masses palpated. Complete paralysis of left leg, partial of right, being able to move toes on right foot. "KJ elicited on left but very feeble. Babinski negative."

Lab.: Urine (11-15; 11-22) Cath., clear, acid, 1012-1014, alb. 2 plus, sugar and acetone 0, finely and coarsely gran. casts 2 plus, pus casts, pus 5-10 H.P.F., blood 0-5 per H.P.F. Blood (11-15; 11-22): Hb. 50 per cent D, -; RBC 2,280,000, -; WBC 9,450, 12,800; achro-

mia 2-3 plus; polys. 74 per cent, 77 per cent; lymphs 20 per cent, 20 per cent; large monos 4 per cent, 2 per cent; eosinophiles 2 per cent, 0; basos 0, 1. Feces (11-25) negative. Blood Kolmer and Kline 4 plus. Spinal fluid (11-15), clear, yellowish, globulin 4 plus ("old blood?"), sugar 0, cells 35, lymphs 45 per cent, polys. 55 per cent. Blood Urea N (11-22) 13 mgs. Spinal Kolmer 4 plus.

Progress: Temp. irregularly elevated, usually between 100 and 102, almost continuous, following no characteristic pattern. Pulse 100-140, respirations 22-36, possibly getting slightly faster as death approached. 11-16—Jerky contractions of left leg noted. Mushroom catheter put in place. 11-21—A large dirty gangrenous sloughed area noted over coccyx, quite painful. 11-27—Slough over buttocks is steadily increasing in size. 11-27—Neurological Exam. (Dr. Chamberlain)—Partial paralysis of both legs, suspicious clonus, bilateral Babinski. "Sensation impaired and ? from level 9th dorsal down." 12-3—Patient complains of diarrhoea. Marked weakness developed, diarrhoea continued, patient died at 7:50 A. M. 12-7-34.

Dr. Chamberlain (conducting): Mr. Adams, will you give your analysis of this case?

Student Adams: It seems that these symptoms, appearing in the order given, involving only the lower part of the body, can be explained only by a lesion in the spinal cord, probably its dorsal portion. Such a lesion could be a myelitis, a hemorrhage into the cord, or some tumor compressing the cord from without. Hemorrhage into the cord would give more sudden symptoms than these, probably without the initial numbness, but a sudden falling. This is usually associated with trauma. As to tumor, it seems to me that she has too little pain in the area affected for this to explain the condition.

Dr. Chamberlain: By tumor, do you mean tumefaction or a neoplasm?

Student Adams: A neoplasm.

Dr. Chamberlain: Will you broaden out on your first suggestion, a myelitis?

Student Adams: A syphilitic myelitis would be the most likely, with a positive blood and spinal fluid Wassermann.

Dr. Chamberlain: Then you favor a luetic myelitis in your analysis? A diffuse or a localized process, pathologically speaking?

Student Adams: Probably localized.

Dr. Chamberlain: What is its nature—a meningomyelitis?

Student Adams: Yes, with some edema about.

Dr. Chamberlain: Mr. Assey, the abstract states that there was an irregular fever, and that the leucocyte count was elevated. Do you think a luetic myelitis can account for these?

Student Assey: I agree with the diagnosis of a transverse myelitis, but I think that an infection of the urinary tract probably accounts for the findings in question.

Dr. Chamberlain: Why the urinary tract?

Student Assey: She has urinary retention with incontinence, and a mushroom catheter was in place; in addition there is pus in the urine.

Dr. Chamberlain: Mr. Barr, what is the effect of a lesion of the dorsal portion of the cord on bladder function?

Student Barr: Doctor, before answering, may I ask you a question?

Dr. Chamberlain: Yes, if I may ask you another in return.

Student Barr: Was a colloidal gold determination done in this case? And what was the blood pressure?

Dr. Chamberlain: The blood pigment in the spinal fluid prevented the colloidal gold test. The blood pressure was 120-90.

Student Barr: And the spinal fluid pressure?

Dr. Lynch: How much confidence would you place in the estimated speed of flow of the spinal fluid, without manometric readings?

Student Barr: If active infection is present, the pressure is more apt to be increased.

Dr. Chamberlain: I would disagree there; the most virulent infections, with actual pus flowing out, drip very slowly.

Student Barr: Was a fundus examination done?

Dr. Chamberlain (reading): "Retinal arteries moderately sclerosed, but no retinitis, hemorrhages or choroiditis." No mention is made of the appearance of the discs. If elevation of the discs had been noted in this case, how would you have interpreted it?

Student Barr: That would suggest brain tumor.

Dr. Chamberlain: The localization of symptoms and paralyzes points to the cord and not the brain, does it not? Now to come back, what effect would a lesion of the dorsal cord have on the bladder?

Student Barr: In tabes dorsalis, a disease of the cord, we frequently see bladder paralysis and urinary retention, but I cannot explain its exact physiology.

Dr. Chamberlain: Where is the bladder center in the cord located?

Student Barr: In the sacral region.

Dr. Chamberlain: A lesion in the cord above this would have what effect?

Student Barr: To cut off the voluntary control of the bladder.

Dr. Chamberlain: Then would the bladder function at first?

Student Barr: It would fail to function at first and retention would follow. Later this effect would be lost, and the center in the cord would automatically control the bladder emptying.

Dr. Chamberlain: Mr. Bowden, what do you think of the advisability of using a catheter in a case of this sort?

Student Bowden: I would not use one until absolutely necessary, as the training of the bladder to become automatic is important.

Dr. Chamberlain: Too, the catheter might carry infection up ward. It isn't always possible to establish an automatic bladder, but that is the desirable thing, since frequent catheterization is very apt to lead to infection.

Student: I don't quite get that. With retention won't there be damming back of infected bladder urine into the kidneys, with infection there?

Dr. Chamberlain: Myelitis causes a lack of control from above, with paralysis of the detrusor muscles of the bladder. What is usual-



ly done is to allow the bladder to fill, and if automatic control has not been established, to empty the bladder at regular intervals by the Crede method used in obstetrics, forcing the urine past the contracted sphincter. Mr. Cain, can you think of any other localized process in the cord which might cause such a syndrome as this?

Student Cain: Acute myelitis also occurs in association with foci of infection elsewhere in the body, but the spinal fluid should be more purulent.

Dr. Chamberlain: Mr. Fouche, how about Pott's Disease of the spine?

Student Fouche: I think that there would be more symptoms referring to the vertebra, and that there would be a suggestive history of tuberculosis, or some physical findings in the lungs. I would expect pain in the back, kyphosis, and stiffness of the back.

Dr. Chamberlain: That is true, but it is by no means impossible for such a picture as this to occur, without vertebral symptoms, and the onset being sudden, with symptoms of cord compression.

Student: Wouldn't the spinal fluid be different from this, more the type of fluid seen in tuberculous meningitis?

Dr. Lynch: Exactly such a picture as this could be seen in Pott's disease of the spine with extra-dural tuberculosis.

Dr. Chamberlain: That is my impression. The most serious omission in the handling of this case was the lack of an x-ray of the spine.

Dr. Johnson: I would like to comment on the color of the spinal fluid. Old blood could give such a pigmentation, and xanthochromia of the spinal fluid is very common in spinal cord tumors, where it is probably old blood pigment. Certain diets, rich in keratin, could so discolor the spinal fluid, as could jaundice.

Dr. Lynch: (Demonstrating autopsy specimens.) The lesion exhibited by this case, grossly, might well be either gumma or tuberculoma; at any rate a chronic localized inflammatory lesion, with tunefaction. The symptoms clinically could well go with either. If it were not for associated syphilitic lesions elsewhere in the body, and the lack of gross or microscopic evidence of tuberculosis, the differentiation between the two in this case would be very

difficult. There was a gumma of the 10th thoracic vertebra, chiefly on the left side, with extension thru the adherent dura, and the formation of a mass, yellow and caseous, on the left side of the cord, with compression and displacement of the cord to the right. There is a well defined gumma of the liver, the other lesion which is circumstantial evidence that this lesion is also syphilitic.

The analysis of that part of the case related to the fever and more acute symptoms, i.e., the suggestion of an ascending infection of the urinary tract following urinary retention and an indwelling catheter, is quite reasonable. But you have overlooked the gangrenous bed sore on the sacrum. I believe that this was the immediately important factor resulting in the patient's death. With this as a focus of origin, there was a septic thrombosis of the smaller radicles of the portal vein, and an acute hepatitis. This bed sore was probably a trophic ulceration dependent upon the lesion in the spinal cord. She also had an ulcerative colitis. Her diarrhoea has not been discussed clinically. I do not know its exact relation to the rest of the picture here. But colitis is not an uncommon complication in septic states. The septic state here was due to the bed sore, and distant emboli with abscesses. A condition of pyemia, could be anticipated in such a case if it lived long enough. That was much more important here than the urinary tract infection. There was a low grade cystitis, but the kidneys showed no evidence of infection.

Microscopically (micro-projecting machine) we see here the eosinophilic, more or less homogeneous caseous material on one side of the cord, with considerable fibrous tissue about it and a marked infiltration by small round cells, many of which have a perivascular distribution. There is no evidence of tubercle formation. The cord, only part of which is shown, is compressed, and degeneration of most of the tracts can be seen.

The usage of the term "syphilitic myelitis" would suggest to me a diffuse inflammation of the cord. A localized syphilitic process, such as would give a sensory level, and localized paralyses, presupposes a gumma to me, and a proper understanding of the situation makes

that term advisable, indicating an actual inflammatory tumefaction.

For tuberculosis to cause such a picture, it would also have to be localized, a tuberculoma.

## SOCIETY REPORTS

### RESOLUTIONS ON DEATH OF DR. OSCAR LABORDE, COLUMBIA, S. C.

Oscar LaBorde, A. B., M. D., the second son of Dr. James Carroll LaBorde and Ada Kinsler LaBorde was born on his father's farm, May 30th, 1879, in upper township, Richland County, South Carolina. He grew into young manhood at the place of his birth, received his early school training in the same vicinity at Wayside school near Littleton, South Carolina. He entered the South Carolina College, now the University of South Carolina. While pursuing his college work, on account of the death of his father in 1898, he withdrew from college for a year and taught school at the place where he had received his early training. He worked there until he could see his way clear in reentering The South Carolina College which he did and graduated at that institution with A. B. degree in 1901.

After receiving the degree of Bachelor of Arts he entered The South Carolina Medical College at Charleston, South Carolina in 1901 for the study of medicine, attended that institution for four years and graduated in the year 1905 with first honor. He served one year Internship in Roper Hospital, Charleston, South Carolina, and in 1906 located in Columbia, South Carolina to practice his chosen profession, where he built up by hard work and close application to duty a large general practice which he enjoyed up to the time of his death, July 31, 1934.

On December 4, 1912 he was married to Miss Ellen Dunavant of Edgefield, South Carolina; to that union three children were born. Ellen LaBorde who is a Junior at The South Carolina University,

Sophie LaBorde, and Oscar LaBorde, Jr.; both are students at the Columbia High School.

Dr. Oscar LaBorde was of a congenial nature, a good mixer, made friends where ever he went. He was an honest man, reliable, and trustworthy. A man who always stood for good principles. All who knew him could readily testify to his integrity and honesty of purpose.

The writer was intimately associated with Dr. Oscar LaBorde for many years and can testify to his trustworthiness and his honesty of purpose in all things.

He was of a retiring nature, never making himself conspicuous but always outspoken on principles, he could not tolerate anything bordering onto pretense or show. Cared nothing for pomp and style but always rendered substantial honest service as a citizen and to his clientele, he was a good provider for his dependents, present and future.

He worked for all, rich, poor, white, and black alike; always performing his full duty. He was an ill man for four years prior to his death, no one knew that better than he, though he continued to carry on his work, his general practice, he went

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Superintendent



around doing good up to the time of his death, he administered to his patients in his office the day before he died, he really died in harness. He loved his work, he enjoyed life to the superlative degree. Modest, reserved, mild in manner, on fence straddler, nothing hypocritical in his make-up. He died as he lived, having faith in his Creator.

A mighty hand from an exhaustless urn  
Pours forth the never ending flood of years  
Among the nations  
Its rushing waves bear all before them  
On its foremost edge  
And there alone is life.

He drained that flowing cup of life forever at the  
brim  
It filled his soul with that elixir of Joy—The incomparable  
Joy of living that made his native atmosphere.

Resolved:

First—That in the death of Dr. Oscar LaBorde, The Medical Profession has lost a successful, honest general practitioner of medicine.

Second—That the public has lost an efficient, honest Doctor.

Third—That his patients, rich, poor, white, and black have lost a true friend, an honest competent medical adviser.

Fourth—That this biography and resolutions be given a full page in our minute book. That they be published in the two daily papers of the City. And that a copy be sent to his family.

Respectfully submitted,

S. E. Harmon, chairman.

T. D. Dotterer.

C. K. Lindler.

Adopted by Columbia Medical Society with a rising vote.

Benj. Rubinowitz, Secretary.

#### COLUMBIA MEDICAL SOCIETY

The regular meeting of the Columbia Medical Society was held on December 10, 1934 at 8:30 P. M., Dr. E. L. Horger presiding.

Minutes of the previous meeting were read and adopted.

Dr. John H. Young, applicant for membership was reelected by a unanimous vote.

The election of officers was next in order, Dr. Davis Asbill and Dr. W. A. Hart acted as tellers. Dr. O. B. Mayer was elected President for the year 1935. Dr. E. L. Horger the outgoing President made a short talk of appreciation for the splendid cooperation of the society during the past year. Dr. O. B. Mayer was escorted to the Chair by Dr. Allison and Dr. Hopkins, and responded with a short talk. Dr. Geo. Benet was elected Vice President, Dr. Benj.

Rubinowitz was reelected Secretary. Dr. T. D. Dotterer was reelected Treasurer.

Dr. Theo. DuBose, Jr. and Dr. E. W. Barron were elected to serve on the House of Delegates for a period of two years. Dr. F. M. Routh was elected as a delegate for one year to fill the unexpired term of Dr. O. B. Mayer, who by election to the Presidency became automatically a delegate. The hold over delegates are Dr. C. K. Lindler and Dr. I. Izard Josey.

Dr. H. H. Plowden was elected to serve on the Board of Censors for 3 years. The hold overs on the Board are Dr. Rodger Doughty and Dr. Manly Hutchinson.

Dr. O. B. Mayer appointed the Auditing Committee consisting of Dr. J. R. Allison, Chairman; Dr. Hugh Wyman, and Dr. Coyt Ham. Committee on Public Health and Legislation, Dr. J. B. Setzler, Chairman, Dr. D. F. Adcock, Dr. T. J. Hopkins, Dr. F. E. Zemp and Dr. Gorden Stuart.

Dr. W. R. Barron announced that during the latter part of January Dr. Howard Kelley of Baltimore will be in Columbia for a short stay and moved that during his visit a special meeting be held if necessary in order to have Dr. Kelley address the society. That the President write Dr. Kelley extending this invitation. Motion was second and passed.

Society adjourned at 10:15 P. M.

Benj. Rubinowitz, Secretary.

*Behind*

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# THE JOURNAL

of the

## South Carolina Medical Association

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EDGAR A. HINES, M.D., F.A.C.P., Editor-in-Chief, Seneca, S. C.—EDGAR A. HINES, Jr., B.S., M.A., M.D., Rochester, Minnesota, Assistant to the Editor

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#### PUBLIC HEALTH

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## EDITORIAL

### SPECIAL SESSION OF HOUSE OF DELEGATES

President William Egleston called the House of Delegates of the South Carolina Medical Association to meet at Columbia, March 5, 1935, to act on the report of the delegates to a special session of the House of Delegates of the American Medical Association held at Chicago, February 15, 16 to consider health insurance and other economic problems. The meeting at Columbia was largely attended and showed a marked interest in the problems confronting the medical profession from the economic standpoint at the present time. Following the report of the delegates to the American Medical Association a committee was appointed with power to act in cooperation with the American Medical Association and committees from other state associations in the study of economic problems. This committee is as follows:

Dr. R. S. Cathcart, Charleston, S. C.

Dr. J. W. Jervey, Greenville, S. C.

Dr. T. A. Pitts, Columbia, S. C.

Dr. C. R. May, Bennettsville, S. C.

Dr. W. R. Wallace, Chester, S. C.

Our House of Delegates indorsed unanimously the report of the Reference Committee of the A. M. A. at its meeting in Chicago as published in the last issue of the Journal.

It may not be out of place to repeat that this report voiced the opposition of the the A. M. A. to all forms of compulsory sickness insurance, whether administered by the Federal Government, individual states, individual industries, community or similar bodies. The A. M. A. report authorized continued study of plans whereby individual communities may promote a satisfactory plan for adequate medical service to all the people.

It may be possible that the menace of compulsory sickness insurance will not have to be faced in the year 1935 but it is certain that as a result of this special meeting of our House of Delegates there will be a better understanding on the part of the medical profession of South



Carolina of the whole situation as it now is, and the profession will be better prepared to take part in any future efforts to improve the medical service to the people of our state.

The Chairman of the State Legislative Committee, Dr. R. G. Doughty of Columbia reported on the progress of medical legislation, particularly, the Workmen's Compensation Bill. This bill appears at present to be satisfactory in its medical aspects.

Dr. G. H. Zerbst, the newly appointed representative of the Federal Government addressed the House of Delegates in regard to the relief problems of the State. Dr. Zerbst will make contact with the County Medical Societies and be in position to facilitate adjustments where necessary in the administration of medical relief in the several communities.

For the first time, then, in the history of the South Carolina Medical Association we have just had a special call for our House of Delegates to meet together. The meeting was exceedingly harmonious and will be productive of much good.

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#### TRIBUTE OF THE PEE DEE DOCTORS TO DR. F. H. McLEOD

A most remarkable evidence of esteem was that of the banquet tendered by the physicians of the Pee Dee Section of the State to Dr. F. H. McLeod of Florence on his birthday, February 26. Covers were laid for about 125 friends of Dr. McLeod. Eminent speakers were invited to deliver addresses on the various phases of Dr. McLeod's life. Among them were Dr. J. W. Jervey of Greenville, Dr. Robert Wilson, Charleston, Dr. C. R. May, Bennettsville, Dr. C. F. Williams of Columbia and Dr. M. R. Mobley of Florence. Dr. William Eggleston of Hartsville acted as toastmaster. At the conclusion of the banquet a beautiful gold watch was presented by the physicians of the Pee Dee to Dr. McLeod and at the same time a lovely silver pitcher was presented by some of his friends of the Columbia Medical Society. Dr. McLeod has been one of the most outstanding physicians and surgeons of South Carolina. At one time he was Editor of the Journal and at a later date President of the State Medical Association. Dr. McLeod's interest in organ-

ized medicine knows no bounds. The McLeod infirmary with its new three hundred thousand dollar addition completed stands as a lasting monument to his energy, foresight and wisdom. This institution is now one of the largest and best equipped in the South.

While the occasion that inspires this brief editorial was a special tribute by some of Dr. McLeod's intimate friends it is well known that to have enlarged upon it would have been a difficult undertaking for Dr. McLeod numbers his friends by the thousands. The Journal congratulates Dr. McLeod on the splendid service he has rendered to his state and to the country and wishes for him many more years of commanding achievements.

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#### PRESIDENT ELECT A. M. A. TO VISIT COLUMBIA, APRIL 8

South Carolina has been peculiarly fortunate this year in the visits of many distinguished medical men. Only a few weeks ago, Dr. Walter Biering, President of the American Medical Association, paid a visit to the Charleston Medical Society. Now comes the good news that Dr. James McLester of Birmingham, Alabama, President Elect of the A. M. A. will visit the Columbia Medical Society. The officers of the Columbia Medical Society have requested the officers of the State Medical Association to assist them in making Dr. McLester's visit a state wide event. It is desired that not less than five or six hundred doctors honor Dr. Lester by their presence. The meeting will be held at eight thirty on the night of April 8, further details of which will be published later. A state wide committee has been requested to serve as a publicity committee. The guest is one of the most distinguished internists in the United States. He was written largely and has become an international figure. His knowledge of nutritional problems makes him an authority on this subject. Dr. McLester will bring a dynamic message to all the physicians in South Carolina. We urge that plans be made now to accept the hospitality of the Columbia Medical Society by the members of the South Carolina Medical Association.

OUR GUESTS FOR THE FLORENCE  
MEETING, APRIL 23, 24, 25

The South Carolina Medical Association has always been fortunate in the matter of invited guests at the State meetings. This year it appears that we are peculiarly favored. The President of the Association and the Scientific Committee have endeavored to stress a program of great practical value to the members of the Association. In other words, the idea is for the members of the Association to really have a post graduate course this year of more than ordinary interest.

*Dr. J. H. Stander of New York*

The Association will be honored by the presence of one of the most distinguished obstetricians and gynecologists in the United States. Dr. Stander is the Professor of Obstetrics and Gynecology at Cornell University and Director of the Woman's Clinic of the New York Hospital, which is composed of the old Lying-In Hospital, the Cornell group of Bellevue and the Manhattan Maternity Hospital. This is one of the largest services of the kind in the world. Dr. Stander had an enviable record before going to New York. He was Assistant to Dr. J. Whitridge Williams, Obstetrician in Chief of the Johns Hopkins Hospital for ten years, and Associate Professor of Obstetrics there for the last five years of his stay in Baltimore.

*Dr. William Bosworth Castle, Boston*

Another guest of unusual attainments who will address the Association is Dr. W. B. Castle, one of the ablest clinicians and research work-

ers in this country. He is Associate Professor of Medicine in the Harvard Medical School.

In 1931-32, he was Director of the Rockefeller Foundation Commission for Study of Anemia in Porto Rico.

Dr. Castle's chief contribution to medicine has been upon the etiological relationship of achylia gastrica to pernicious anemia. In a series of brilliant experiments, he demonstrated that the secretion of the stomach in the pernicious anemia patient is lacking in an enzyme like substance, present in normal individuals which forms, when mixed with meat, a specific hematopoietic substance. The first announcement of this discovery was made in April 1928. It clarified our knowledge of the cause of pernicious anemia and also gave rise to a new concept, namely, that of deficiency disease which may be conditioned by abnormalities of the gastrointestinal tract.

Dr. Castle has also made contributions in the field of diabetes mellitus, muscle metabolism, vitamin deficiency, pregnancy anemia, and iron deficiency anemia. In Porto Rico, working with Dr. C. P. Rhodes, he was able to clarify the deficiencies responsible for the anemia in sprue and hookworm disease.

*Dr. Temple Sedgwick Fay, Philadelphia*

Dr. Fay is Professor of Neurological Surgery at Temple University School of Medicine, Philadelphia. Dr. Fay is well known throughout the country for his contributions to scientific medicine. In recent years neurological surgery has made extraordinary strides and Dr. Fay will present a subject of extreme interest to general practitioners of South Carolina.





WILLIAM EGLESTON, M.D.,  
1873-1935

## Death of Dr. William Egleston, President of the South Carolina Medical Association

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As the Journal goes to press we learn of the death of our President after an illness extending over several months. Dr. Egleston was born September 2, 1873, at Winnsboro, South Carolina. He was educated at the old Mt. Zion Academy there and at the University of the South, Sewanee, Tennessee. He was graduated in medicine from the Medical Department, University of Nashville, Tenn., in 1898. At one time he was a teacher in the Medical Department of the University of the South at Sewanee. In 1900 he married Annie Bonham Aldrich of Barnwell, South Carolina. He has practiced medicine since 1900 at Hartsville.

Early in his professional career Dr. Egleston became a profound student of preventive medicine, particularly with reference to malaria. At the Summerville meeting of the State Medical Association in 1909 he read a paper on the subject, "Sanitation in Small Towns." In this paper Dr. Egleston outlined the successful efforts in the control of malaria in the town of Hartsville. This represented pioneer work of the highest order and it was so recognized throughout the country.

Dr. Egleston's loyalty to organized medicine has brought to him many honors by the profession in his section of the State and his wide knowledge of public health as shown by the pioneer work at Hartsville led to his election to membership on the Executive Committee of the State Board of Health in 1909, following the death of Dr. James Evans of Florence. Perhaps, Dr. Egleston is best known throughout the State for his enthusiastic activities as a member of the State Board of Health. This was clearly demonstrated when he was elected to the Chairmanship upon the resignation of Dr. Robert Wilson from that position in 1931.

Dr. Egleston was the highest type of general practitioner of medicine. He had a keen insight into the advancement of modern medicine and practiced it to the day of his death from that standpoint. His was a magnetic personality and he was a leader in many lines of activities. His business acumen was often acknowledged by his being elected to responsible positions in banking circles. He was a civic leader of outstanding merit. He was likewise prominent in religious activities. He served his country during the world war as a Surgeon in the Medical Corps of the United States Army.

Dr. Egleston was conscientious in the performance of every duty and numbered his friends by the thousands. As president he gave to the South Carolina Medical Association of his finest efforts notwithstanding his affliction with a serious disease. It was his earnest wish that the meeting to be held in Florence next month should have a program second to none and he worked to that end throughout his long illness.



# PRELIMINARY PROGRAM

## *Eighty-seventh Annual Session*

# SOUTH CAROLINA MEDICAL ASSOCIATION

## Florence, S. C., April 23, 24, 25, 1935

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The House of Delegates will convene on Tuesday evening, April 23, at eight o'clock.

The Scientific Program Wednesday and Thursday.

Dr. H. J. Stander (invited guest) of New York will present a paper, on Nephritis in Pregnancy.

Dr. W. B. Castle (invited guest) of Boston will present a paper on The Diagnosis and Treatment of Anemia and Certain Associated Deficiency Diseases.

Dr. Temple Fay (invited guest) of Philadelphia will read a paper on Head Injuries; Their Management and Treatment.

### PAPERS

*Time Limit Fifteen Minutes*

This Whole Program will be Rearranged

1. The Practical Management of Acne Vulgaris,  
By J. Richard Allison, Columbia, S. C.
  2. Malignant Melanoma (Black Cancer),  
By Kenneth M. Lynch, Charleston, S. C.
  3. Differential Diagnosis of Bright's Disease,  
By James A. Bradley, Florence, S. C.
  4. Fracture of the Hip Joint (Intracapsular)—A  
New Method of Skeletal Fixation,  
By Austin T. Moore, Columbia, S. C.
  5. The Suppurative Pericarditis,  
By J. Emmet Madden, Columbia, S. C.
  6. The Etiology and Treatment of Peptic Ulcer,  
By Wm. H. Speissegger, Charleston, S. C.
  7. Subphrenic Abscess,  
By G. T. Tyler, Jr., Greenville, S. C.
  8. The Tonsil As Seen Through the Eyes of the  
Pediatrician,  
By R. M. Pollitzer, Greenville, S. C.
  9. The Treatment of Fractured Skulls,  
By C. O. Bates, Greenville, S. C.
  10. Acute Laryngeal Stenosis in Children,  
By E. W. Carpenter, Greenville, S. C.
  11. The Early Diagnosis of Chronic Arthritis,  
By O. B. Chamberlain, Charleston, S. C.
  12. Diagnosis and Treatment of Ischiorectal Abscess  
and Rectal Fistulae (Lantern Slides),  
By Wm. H. Prioleau, Charleston, S. C.
- 

### THE SOUTH CAROLINA PUBLIC HEALTH ASSOCIATION

This meeting will be held at Florence on Tuesday, April 23 at 10 A. M. A splendid program has been

arranged and it is expected that among the guests will be Dr. C. E. Waller, Assistant Surgeon General U. S. P. H. S., and Dr. Harry S. Mustard, School of Preventive Medicine—Johns Hopkins.

The Public Health Meeting is one of the most attractive features of the State Medical Association and usually has an attendance of about one hundred.

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### THE WOMAN'S AUXILIARY

There has been an increasing interest in the Woman's Auxiliary to the South Carolina Medical Association. A strong Society has been organized at Florence and it is hoped that the largest meeting of the Auxiliary ever held will be the record at Florence this year. The Woman's Auxiliary will meet on Wednesday, April 24.

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### HOTEL ACCOMMODATIONS

Communications addressed to the Florence Hotel or to Dr. F. H. McLeod, General Chairman of Committees will receive due consideration. There are several good hotels and ample facilities for taking care of the Association. The final program will contain all this information in full detail.

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### COMMERCIAL AND SCIENTIFIC EXHIBITS

There has been a growing interest in educational and commercial exhibits. It is expected that this feature will be up to the usual standard.

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### LOCAL COMMITTEES

General Chairman, Dr. F. H. McLeod.  
 Arrangements Committee, Dr. L. J. Ravenel, Dr. O. T. Finklea, Dr. M. R. Mobley, Dr. W. R. Mead, Dr. P. D. Hay, Dr. E. C. Hood, Dr. E. M. Hicks.  
 Registration—Dr. L. J. Ravenel.  
 Meeting Place—Dr. O. T. Finklea.  
 Entertainment—Dr. M. R. Mobley.  
 Publicity—Dr. W. R. Mead.  
 Scientific Exhibits—Dr. P. D. Hay.  
 Commercial Exhibits—Dr. E. C. Hood.  
 Hotel Committee—Dr. E. M. Hicks.

## ORIGINAL ARTICLES

### The Importance And Ease of Prescribing Diets

*By L. Paul Barnes, M.D., Bennettsville, S. C.*

I consider it a great pleasure and honor to be placed upon this program, and my only regret is that I do not have a scientific paper that would add to your total of knowledge. It is my hope, however, that I may bring to your attention again, and further impress upon you, the importance of diet as a therapeutic agent in disease, and in prevention of disease.

It is conceivable that the practice of medicine will continue to advance with the same if not greater rapidity during the next ten years as it has in the past decade. It is interesting to speculate and endeavor to determine in which branch of medicine the greatest progress will occur. Probably few of us will agree, and surely no one can say with any degree of certainty, for tomorrow some unthought of discovery may change the entire direction of progress.

Not long ago a famous British surgeon stated that in his opinion further advances in medicine would probably come at the expense of surgery. This is another way of saying that when disease is prevented less curative treatment is needed. It also implies that the prevention of disease, or preventive medicine, is and will continue to receive more and more study. Now, while it is true that foods have become in many diseased states our most valuable therapeutic agent, they rank today, along with sanitation and immunology, as the important agents in preventing disease.

In 1932, Dr. Chalmers Watson, of Edinburgh, stated in a lecture on diets that any important improvement in health would most likely come from improved nutrition. The two years that have elapsed since this statement was made have not proven his idea false. There has been a very definite trend towards

the study of foods, both as a preventive agent and a curative agent in disease. At present much research work is being done, and many articles are being written and published that are increasing our knowledge of nutrition. The American Medical Association has in recent years established a Council on Foods. The members of this association are all familiar with the research study made on our South Carolina grown vegetables. Further proof of increasing interest in nutrition is the fact that during the past year our own Medical School in South Carolina has established a chair of nutrition.

The scientific world has not felt this awakening alone. Our patients have become diet conscious, and are demanding more information than ever before on this subject. It behooves us to be able to advise and prescribe the correct diet for our patients. If we lack information or fail to take the necessary time, they will turn to other sources for advice. How many of your obese patients, doctor, placed themselves on that preposterous low protein diet, called the Hollywood 18 Day Diet some few months ago? How many of your patients are turning to the highly advertised food products that are flooding the pages of all advertising media? These quasi-scientific food products greatly exaggerate their worth, and in many instances have done much harm. In reading the advertisements in our leading periodicals alone, little doubt is left in the mind of the reader that bran would not cure all types of constipation; that mixtures of dry milk, sugar and cocoa would not grow flesh on a scare-crow, and that yeast will not cure all digestive disorders, and every pimple that affects the brow of our debutantes.

The fact that these products are being advertised means that they are being sold and proves that your patients and mine are anxious to have their diets regulated. I feel that the stage is set for us to do immeasurable good in improving nutrition. The question is, are we prepared and will we take the time? I believe



that we of the profession are better acquainted with the action of strychnine or digitalis than we are with turnip greens and cabbages. However, I do not wish to imply that you do not know your "Onions." It has been almost impossible for many of us, in order to save time, to resist the temptation to tell our nephritic patients "Oh, just don't eat any red meat." Many of us are prone to talk on and on to our patients about their "acid condition," which to the intelligent patient means that our ignorance is tiring, for they know that after the lecture they will again be advised to take bicarbonate of soda. I believe that the same kind of careful consideration should be used in prescribing diets as in prescribing thyroid extract, quinine, or any other drug.

The subject of my paper indicates that I am about to explain an easy way—a short cut—over the difficulties of prescribing diets. The title is not honest in its entirety, for I believe that each item of food should be studied much as we study the pharmacology of drugs; their composition (mineral, vitamin, carbohydrate, protein, fat, etc.); also their acid base reaction, their digestibility in health and diseased states, changes in composition during various methods of cooking, and incompatibilities.

If this was easy information to acquire, I am sure that I would be better informed. However, I feel certain that when this data is secured or assimilated, the examination of your patient will indicate to you the amount and type of necessary food in the same way that your examination now leads you to choose a drug and prescribe its dose.

While it is imperative that every diet should be as individual as any other therapeutic measure, I have found it advisable, because it saves time and impresses the importance upon the patient, to type and have mimeograph copies

made of certain foundation diets that are commonly needed in my practice. With these slips as a foundation, I find that it is quite easy to add or subtract foods to meet the demands of each individual case. On these slips an effort is made to inform the patient what we are trying to accomplish, why the diet should be of benefit, and how in a general way we hope to improve his or her condition.

If I may allow myself a few more minutes of your time, I would like to show you one or two of these Foundation Diets.

Lantern Slides.

I. LOW PROTEIN DIET

Christopher, Cecil, Practice of Medicine,

II. SMOOTH DIET

Modified after Alvarez

LOW PROTEIN DIET

This diet is prescribed because a low protein intake will place considerably less strain on the kidneys and because many foods besides meat contain protein, making elimination of this article alone insufficient.

- 1. Any combination of foods may be selected.
  - 2. Foods not listed should be excluded.
  - 3. Foods in group 1 and 2 are restricted in amount.
  - 4. A full portion in group 1 counts one, in group 2 counts 2.
  - 5. In group 3 there is no restriction in amount, but discretion must be used if patient is overweight.
  - 6. Each point in the score is equal to 4.6 gms. of protein material.
  - 7. Do not add salt or spices to food after cooking.
  - 8. If the lack of salt is distasteful, salt substitutions can be used.
- Your total score for the day should be-----

GROUP 1

Each full portion counts 1

<i>Bread</i>		<i>Vegetables, etc.</i>	
	<i>Full Portion</i>		<i>Full Portion</i>
Bread, white -----	One average slice	Baked beans -----	1 tablespoons
Bread, graham -----	One average slice	Lima beans -----	1½ tablespoons
Uneda biscuits -----	5 crackers	Potatoes, creamed -----	1 tablespoons
Shredded wheat -----	One biscuit	Potatoes, mashed -----	1½ tablespoons
Graham crackers -----	5 crackers	Potatoes, baked or boiled -----	1½ tablespoons

<i>Cereals</i>	<i>Full Portion</i>		
Oatmeal	2 tablespoons	Canned Corn	2½ tablespoons
Boiled rice	3 tablespoons	Green peas	2 tablespoons
Cornmeal mush	4 tablespoons	Beets	5 tablespoons
Cream of wheat	6 tablespoons	Spinach	4 tablespoons
Farina	6 tablespoons	Bananas	2 large
Macaroni	4½ tablespoons	Cream, heavy	¾ cup

## GROUP 2

*Each full portion counts two*

<i>Meat, etc.</i>	<i>Full Portion</i>	<i>Fish, etc.</i>	<i>Full Portion</i>
Milk	1 glass	Fresh water	1"x1"x1½"
Egg	1 egg	Mackerel	1"x1"x1½"
Flour, sifted	2/3cup	Shad	1"x1"x1½"
Lamb chop, broiled	2/3chop	Other salt fish	1"x1"x1½"
Lamb, roast	3"x2½"x¼"	Salmon, canned	1½ tablespoons
Beef roast	3"x2"x¼"	Oysters	7
Steak, broiled	2"x1"x1"	Shrimp	6 small
Chicken roast	3"x3"x½"	Crab meat, canned	2 tablespoons

## GROUP 3

*No restrictions*

Asparagus	Oranges	Peaches	Syrup	Apples
Cabbage	Cucumbers	String beans	Dry cereals	Apricots
Carrots	Lettuce	Tomatoes	Pears	Berries
Celery	Mushrooms	Onions	Sugar	Cherries
Squash	Turnips	Butter	Honey	Lemons
Pineapple	Grapes	Grapefruit	Candy	Cantaloupe

## SMOOTH DIET

The object of this diet slip is to provide you with a diet that will contain a minimum of indigestible food and to reduce and soften the residue that enters the colon. This softer and less-irritating residue will cause less trauma to the intestinal tract. This diet is exactly opposite to the high residue bulky diet containing bran and other coarse foods, prescribed in atonic conditions of the tract.

Not only the choice of foods but the method of preparation and the manner in which they are eaten is of extreme importance. Below are some general hints to be used in preparing and digesting the diet:

1. Fried foods are less digestible than stewed, baked, and boiled foods.
2. Slow cooked vegetables, preferably pressure-cooked, are more digestible than pot-cooked vegetables.

3. Foods eaten in haste or while under any emotional excitement or strain usually enter the colon undigested.

4. An adequate chewing surface should be provided by your dentist.

5. Avoid drinking large quantities of water during meals as this washes the bolus down before salivary saturation is accomplished.

6. Rest after dinner (the heaviest meal), relaxing as completely as possible. This is extremely beneficial.

*Selection of Food**Bread*

White loaf-bread, biscuit made thin and browned well eliminating soggy center. Avoid whole wheat bread, bran muffins, and pastries.

*Cereals*

Cooked cereals are to be preferred—hominy, sifted oat-meal, cream of wheat, and rice.



Avoid shredded wheat biscuits, bran, and dry cereals containing large amounts of bran.

#### *Dairy Products*

Eggs, butter, butter-milk, and cream cheese may be used. Raw milk may be used, but it should be remembered that raw milk is often the source of trouble.

#### *Meats*

Tender cuts or pieces of chicken, fish, roast beef, steak, and squab, avoiding bristles and fibrous portions. Veal may be tried. Duck is best excluded.

#### *Vegetables*

At first all vegetables should be purged, eliminating skin, seeds, and cores. Select from the following list: white potatoes, sweet potatoes, lima beans, kidney beans, canned baked beans, English peas, field peas, carrots, beets, tomatoes, egg-plants, squash, rutabagas, and turnips. Avoid celery, lettuce, onions, string beans, mustard greens, broccoli, cabbage, kale, brussel sprouts, turnip greens, collards, corn, cucumbers, olives, spinach.

#### *Fruits*

Strained juice of oranges, grapes, or grapefruit; peaches, apple sauce, ripe bananas. Avoid melons, pineapple, berries containing seed, fruit skins and seed, and all nuts.

#### *Beverages*

Kaffee-Hag, postum, and cocoa might be tried if coffee and tea over stimulate, as is often the case.

### DISCUSSION

Dr. J. W. Jervy, Greenville:

It is with great gratification that I see the finger of understanding pointed once more to the high value of nutrition in practical medicine, and the more so coming from one of our younger members. Nothing could be of more value to us than a thorough comprehension of the fact that surgery has about reached its culmination. Little more is to be expected from its aid than is already available. Undoubtedly, the future of medicine lies in the fields of nutrition and bio-chemistry, which must include the active application of the principles of endocrinology in such form and fashion as we may by degrees be able to bring it into our understanding. I do not like the term "diet." It has been said that "diet is a dangerous thing" inasmuch as it leads to a certain narrowness and uncertainty on the part of a patient and often enough the making of a hypochondriac. I prefer to tell my patient specifically that I am not putting him on a diet but that I am merely outlining

some food suggestions which will be of assistance to him.

I further believe that the application of nutritional requirements of the individual can be much more easily accomplished than is generally understood in the profession. The terrible old equations and mathematical formulae of various kinds laying down hard and fast rules for a certain number of calories representing so much carbohydrates, so much proteins, so much fats, while not entirely useless at the present time no longer stand out with the same great importance as formerly. An individual consuming a reasonable amount of food, and assuming that it is of an acceptable kind for the particular individual, will with very little doubt obtain the necessary calory intake, but this intake must be represented by those foods which will supply the requirements for the maintenance of a normal acid-base balance. This being accomplished, the vitamin and mineral intake and particularly *organic* mineral intake, is almost, if not quite, of automatic adjustment, and it becomes unnecessary to speak of those things which are often so nebulous in the minds of the general practitioner, the hydrogen-ion concentration, carbonic acid saturation and other highly technical minutiae. I am not speaking of well-known specific diets in specific disease.

The indicator of the acid-base balance is most easily inspected in the mucosa of the nasal septum and as a rule the entire intranasal lining. Its relative color and local deposits will indicate to the experienced observer in almost every case whether an acid ash or an alkaline ash food is being predominantly consumed, and the direct result of this consumption is the cause of activation, in all probability, of either the sympathetic system on the one hand, or the parasympathetic on the other hand. It is also true that the ingestion of the various minerals will affect the activity of the autonomic system, and, as Blackmar has shown, it is important that this autonomic balance be preserved. In the very large proportion of cases it will be found that a sympathetic dominance places the patient in a zone in which he is subject to infection. In a case of parasympathetic dominance he is placed in the zone of so-called allergy. In maintaining his zone between these two we will maintain the autonomic level which means health, and in an overwhelming majority of cases this level is possible of maintenance by the regulation of foods, recognizing the influence of acid ash and alkaline ash foods and by the proper exhibition of suitable minerals and vitamins. Here lies the why and wherefore of the inestimable value of the work of our South Carolina Food Research Commission in pointing out the importance of the iodine in our soil. The iodine-chlorine balance, the sodium-potassium balance, may be classed as fundamental in the preservation of normality.

This is the way, and the only way, that the tissues of the body can be made to create and hold a proper metabolism and can either be kept or restored to a

normal habit which will resist the invasion of infection and will prevent the changing of a more or less natural infestation of microorganisms into a real infection. Too long our profession has attacked the seed (the invading organism) and paid little attention to the soil (the human tissues). The future will see a radical change in this attitude, and the effort will be so to prepare and nourish and maintain the normal tissue soil that infective seed can gain no foothold to produce disease. This theory holds good in many other forms of disease beside infection, and indeed must be the foundation stone for the prevention of all pathology.

It is extraordinary to what an extent the interest of a medical practitioner is increased by a little understanding of these fundamental principles. Try it, and see how much more zest and gratification is put into daily practice, when one observes the often startling and almost magical effect of these procedures in cases which have hitherto been considered, if not hopeless, at least uninteresting and tiresome.

Dr. Barnes is to be congratulated for bringing this subject up for consideration, and it is only to be hoped that these words will accelerate that which is absolutely sure to come any way before very long—that is, a wide-spread interest in the matters of nutrition, bio-chemistry and endocrinology. I commend them to your immediate interest.

Dr. William Weston, Columbia:

I wish to acknowledge my gratitude to Dr. Barnes for having given me the opportunity of reading his paper before coming to this meeting and also to congratulate him upon his point of view. I also wish to acknowledge my gratitude to this association for having endorsed the resolutions presented last evening, which are intended to extend the great humanitarian interest of the Federal Government in making a more careful study of foods in the various sections of the United States, along the line so auspiciously begun in South Carolina. In this connection may I call attention to the fact that the people of South Carolina are in a better position to judge the chemical qualities of their foods than are any other people in the United States, or for that matter in the world.

Foods differ in their nutritive value. There is one point which I wish to briefly call to your attention. The chemistry of vegetables and fruits differs in one locality from others. These differences often determine the sufficiency or deficiency of one or more minerals. In certain localities it is known that cabbage absorbs from the soil certain poisonous elements, the cyanides. It is well known that cabbage is a valuable source of calcium but on account of the presence of cyanides they will, when boiled, produce goiter unless they contain a high iodine content. This is due to a failure to bring about a balance between calcium, phosphorous and magnesia. The presence of iodine appears to overcome the effect of the cyanide in bringing about the balance.

Our studies in the chemistry of foods have resulted in discovering elements which as we had not suspected before. For instance, in the green leafy vegetables we formerly attached little importance or significance to chlorophyll. Subsequently we learned that we may associate it with a high vitamin A content.

Another element about which we know comparatively little has been discovered in vegetables and certain berries. This substance is known as myrtillin which seems to be concerned in the metabolism of sugar.

No doubt from the studies such as are contemplated and requested by this, the Southern Medical Association, and many other medical associations by the Federal Government in collaboration with our medical colleges we believe that many other important elements will be discovered, as well as the relationship of these elements to each other.

Dr. Roe E. Remington, Medical College, Charleston:

First, I wish to thank the Association for the privileges of the floor, not being a physician or a member of your Association.

It is a very hopeful thing that an association such as this gives space on its program to such a paper as Dr. Barnes has given us. The increasing interest among our people in the subject in which I am so vitally interested is reflected, I think, in the number of books that are appearing at the present time. I think there are no fewer than ten books that have appeared during the past year on the general subject of diet in health and disease.

By the way, I agree with Dr. Jervey about the word "diet." You know I, being more or less of a layman myself, see the lay point of view; and I notice that when my wife says to her neighbor that she is on a diet now, she expects sympathy. Of course, we are all on a diet all the time.

Unfortunately, this subject of nutrition is in a formative stage, and experimentation still goes on—and must go on when knowledge is not complete. There prevails an opinion among a great many people (and many physicians, I must say) that there is an instinct that will guide us in the selection of food. I wish I had time to go back and show that the selection of food depends upon habitude and living conditions rather than instinct. Races have gone down to oblivion because they lived in such places or their occupation was such that the food which came to them was not adequate for their needs.

Now, as to the advertisements that are published in the press and over the radio, the thought comes to my mind that the medical profession has been too ethical in not pushing out to the public more definite, specific information on this subject. I like the idea that your suggestion to your patient should not be: "Don't eat red meat" or "Don't eat carbohydrates," but rather that it should be definite and specific; if you can, mimeograph or print it. It should be something that impresses on the patient that you think it is



important. It should be something that is economically possible for the person for whom you prescribe it because dietary treatment is not a matter of a few days but of a long period. We have been impressed with the fact that the treatment of pellagra, for instance, is not so much a scientific problem as it is an economic problem.

Dr. Barnes, closing the discussion:

I feel that my paper has been a perfect success. That might seem strange, but the object of it was simply that I might hear someone that knew something about this subject discuss it. I believe it is important, and I believe that many of us are throwing this very valuable therapeutic agent away. I thank you for your very valuable discussion.

## Anemia in Infants And Young Children

*C. Williams Bailey, M.D., Spartanburg, S. C.*

In the last few years with the more exact and intensive methods of studying morbid processes there has come into being a renewed interest in anemia with a view to finding causes, studying chemical reactions, and attempting to do something about preventing the condition as well as correcting it. Babies used to be considered pale and little or nothing was said about it. Now a baby or any other person has cells counted and the percentage of his hemoglobin or iron determined and then an exhaustive study of cause and effect. The discovery of liver therapy by Whipple and Minot has given tremendous impetus to the treatment of anemia, so much so that nearly all medical publications contain voluminous reports of somebody's new ideas or experiments on the subject.

So voluminous are the discussions on anemias that this paper will not attempt to go into the subject beyond the work done in the last few years. Likewise time will permit only brief remarks outside of the most important and ever present secondary anemias. The so-called primary anemias are rarely encountered in young children, and indeed many good men rather doubt that any anemias are primary. Dr. Morse says that the normal peculiarities of the blood in infants probably account for a great many uncalled for classifications of anemia. Examples of this are primary pernicious ane-

mia, and aplastic anemia, both of which may be only rare and atypical cases of secondary anemia.

One unfamiliar with the variations of the blood at different ages might easily be misled. At birth the hemoglobin is about 110 per cent-120 per cent and red cells correspondingly high. Helen Mackay, studying anemias among London infants over a period of 3 years with 770 cases and 3,100 hemoglobin estimations, concluded that anemias were largely nutritional in origin and due to iron deficiency, and that infants derived an adequate supply of iron from their own liver to meet their needs during the first few months of life. Hemoglobin falls sharply from birth to about 65 per cent at two or three months, then rises to 70 per cent at the 5th or 6th month, then falls steadily to 65 per cent at the end of the first year.

This report is in agreement with Finkelstein, Goodfellow, and most observers. It is stated also that these hemoglobin values are about 5 per cent lower for artificially fed babies. From this time the hemoglobin and erythrocytes remain about the same for a year and then slowly rise to a normal of 80 per cent at six years. H. Finkelstein says that 80 per cent is the highest limit obtainable by treatment in infants. In other words, a hemoglobin of 80 per cent is as high a normal as can be produced. A. C. Hampson states that a rapid hemolysis after birth produces the relative anemia found later. The iron stored in the liver necessarily reaches there in utero. It is interesting to note here that Strauss found that the offspring of very anemic women were born with as high hemoglobin and erythrocyte counts as those of women who were not anemic. However, under the same living conditions at the end of a year the infants of the anemic mother's hemoglobin averaged 46 per cent and those of normal mothers 67.1 per cent, a difference of 21 per cent. Neale and Hawksley following their studies on the blood of women during pregnancy and on the young infant offsprings of these pregnancies concluded that anemic infants are often born of anemic mothers, that anemia during pregnancy is common, and that the infant's iron reserve is low because of reduced iron in the maternal blood. They also found that feeding iron containing foods and

medicinal iron and copper during pregnancy prevented the development of hypochromic anemia. They state that a congenital anemia may be a true nutritional anemia due to deficiency in the maternal diet. Not all infants born of anemic mothers, however, are necessarily anemic. All investigators agree that iron is the all important factor influencing anemia. Breast milk and cow's milk are very low in iron. Therefore, these questions present themselves: Is the relative paucity of red blood normal in young infants comparable to their initial loss in weight, or has Nature slipped a cog in providing for infants, or are prenatal conditions more responsible than is now known? Maurer *et al* have produced convincing evidence that a small quantity of breast milk facilitates the absorption of iron and causes greatly increased absorption of iron from cow's milk fed simultaneously. Krasnogorsky found the same true of a combination of breast milk and goat's milk. It was found that only six ounces of breast milk a day caused markedly increased absorption of dietary iron. Regardless of the why or wherefore, serious anemias are often found at the end of the first year in infants and often in young children during the pre-school age. The latter are almost invariably due to a combination of poor eating habits plus infections.

The most frequent and troublesome anemias of early infancy may be classified in order of their importance as:

1. Nutritional—due to some dietary insufficiency.

2. Constitutional—Prematurity, twins. These cases exhibit evidences of either poor and under-developed hematopoietic systems or abnormally poor iron storage from the maternal source.

3. Infections, particularly upper respiratory.

4. Hemorrhage.

5. Hemolytic jaundice—a familial disease manifested by blood destruction of unknown cause and cured by Splenectomy.

6. Primary anemia of the new-born. This is a strange, spontaneous, severe anemia which develops about the first or second week of life. No cause such as hemorrhage can be found, and recovery usually takes place. There is only mild icterus. The condition is rarely seen.

In older children:

1. Improper diet or deplorable eating habits.

2. Infections, Acute—mostly upper respiratory and childhood diseases. Chronic infections such as tonsils, adenoids, sinuses, and abscessed teeth, nephritis and pyelitis are of equal if not greater importance.

3. Intestinal Parasites.

4. Hemorrhages, such as nose bleed, purpura, hemophilia, etc. It would be amiss here not to emphasize the importance of the sub-acute and chronic infections referred to above. These conditions impoverish the blood and the child's vitality slowly but surely, and for a long time their disastrous effects are not realized. Chronic colds, diseased tonsils and adenoids and sinuses, and particularly alveolar abscesses are frequent conditions which militate against a child's well being and are manifested chiefly by anemia and anorexia. Another thing which produces anemia and general debility is improper care during convalescence from an acute disease.

It is rather difficult to evaluate the symptoms of secondary anemia. The causes of the condition may have faded out into the background, or the symptoms of the causative condition may still persist. There is, however, a general agreement that the anemia *per se* produces pallor of skin and mucous membranes, and that these children have very little endurance, irritable disposition, poor appetite, dyspnea, and may have intestinal and gastric symptoms, cold extremities, insomnia, headache, and even syncopal attacks. The fatty tissues may not be diminished, but the muscles are flabby. They may and often do have cardiac hypertrophy and a loud hemic heart blow. The spleen is often markedly enlarged and the liver somewhat enlarged from hypostatic congestion. In some cases there is anasarca, but this is usually due to an unbalanced diet, most often inadequate protein with an excess of carbohydrate. The blood is of the achromic or chlorotic type. The hemoglobin may be down to 10 per cent or 20 per cent and erythrocytes about one million. The color index is low. There are varying pictures of blood regeneration exhibiting many reticulocytes, nucleated red cells and poikilocytes. As a rule the younger the infant the more immature the cells seem. The platelets



are normal and fragility normal or increased, except in hemolytic jaundice, in which the fragility is decreased. The white count is normal or varies according to the influence of the primary cause of the anemia.

As to prognosis it may be said that few cases of anemia die of the anemia. Death may be due to the cause of the anemia or to sepsis, but is most often due to an intercurrent infection. These anemic infants and children have their general resistance so lowered that they often take cold and die of broncho-pneumonia or succumb to lobar pneumonia. Lehn-dorff states that in general the usual diseases of infants occur three times less often in infants treated prophylactically with iron than in untreated infants.

Since the symptoms of anemia develop slowly and insidiously and no trace of the primary cause may be seen, it becomes necessary in some cases to rule out by a study of the blood the primary anemia and related diseases. Pernicious anemia is either excessively rare or non-existent before about the tenth year. There is a high color index, many megalocytes, decreased platelets and decreased fragility.

Aplastic anemia is diagnosed chiefly by its constant lack of response to treatment, decreased reticulated red cells, greatly decreased platelets, increased fragility and absence of nucleated forms.

Von Jakseh's Pseudoleukemia exhibits a tremendously enlarged spleen, lymphocytosis, increased platelets, moderate number of myelocytes.

Sickle cell anemia is found practically entirely in negroes and is characterized by the characteristic cells.

Chlorosis is becoming more uncommon as time goes on. It is an achromic anemia found mostly in girls at puberty.

Gaucher's Disease occurs in early childhood and progresses slowly, lasting twenty years or more. The anemia is moderate, and there is an enormous splenic enlargement and some enlargement of the liver. The finding of typical Gaucher cells in the spleen, bone marrow, or liver proves the diagnosis. It is familial.

Banti's Disease, often called splenic anemia, is found in late childhood. It is characterized by slow progressive enlargement of the spleen

over a period of years, followed by enlargement of the liver, hepatic cirrhosis, and ascites. There is marked anemia. Splenectomy is the one hope of recovery.

The treatment of secondary anemia divides itself into prophylactic and curative. Aside from preventing disease and chronic infections and a strict adherence to personal hygiene and proper diet, iron seems to hold the center of the stage as of old. For many years iron was used in all the simple inorganic forms. Then there was a period during which complex and high sounding organic iron compounds held sway. Now the simple iron salts are used by practically everyone in preference to the more elaborate compounds. Nowadays the pharmaceutical houses manufacture medicines in very attractive and convenient forms. Iron salts in solution, iron in capsules, iron and copper in the proper dosage, and iron and liver extract are on the market, and are very conveniently prescribed. There is a substance called Copperin, which is a capsule containing a soluble organic iron and small doses of copper. This gives very good results. Lilly puts up iron and ammonium citrate and liver extract in a capsule of convenient dosage. This is called Lextron. There seems to be a general state of confusion and disagreement as to the proper dose of iron to give. In the main the doses sound unnecessarily large when one takes into account the fact that a large part of the iron comes through in the stools.

Premature babies and other babies coming under the class of immatures practically always develop anemia at about the second or third month. It is these cases in which prophylactic treatment is most indicated. Since liver extracts have proven to be very efficacious, it has been demonstrated that these weak babies may be given liver extract and also iron daily. Hugh Josephs in 1931 concluded that iron or iron and copper were not very effective preventive measures for anemia but that iron used with liver was more successful. 10 per cent Ferric Ammonium Citrate, 2 c. c.'s per kilogram body weight per day and .5 per cent copper sulphate, 1 c. c. per kilogram body weight per day were used. Lewis uses .5 per cent copper sulphate solution 1 to 2 teaspoonfuls daily and .1 to .4 gms. Ferrous Carbonate daily. Reducing

iron in doses of .1, .5, to 1 gram daily may be given these nursing infants. It is often given with 1 per cent Hydrochloric Acid Solution in order to convert the iron into Ferrous Chloride. Steenbock showed that experimental alimentary anemia of rats and rabbits produced by cow's milk can be prevented and cured by commercial iron salts but not by highly purified iron salts. He finally concluded that the addition of small quantities of copper produced the best results. He used .05 to .1 mg. of copper daily.

In the treatment of secondary anemias a great many factors have to be considered,—the existing cause, the severity of the anemia, the diet of the child, the presence of infections, etc. The first thing to do in all cases is to determine the cause of the anemia. If it is an infection, removal of the infection is the only thing which will cure the anemia. If it is an infectious disease, time and proper feeding will usually restore the child to health. If it is the diet, dietary re-arrangement with a considerable amount of reinforcing the diet is the first consideration. All observers agree that iron given during an acute illness or in the presence of an infection does not have any effect. Some men are so enthusiastic about iron that they give it during acute infections and claim that the iron increases the appetite.

In very acute and severe anemia, blood transfusion is the first treatment of choice and produces prompt, though temporary, upbuilding of the blood. The transfusion must necessarily be followed by liberal well-balanced diet and addition of iron and often some form of liver to produce permanent results. Intravenous transfusions cause less discomfort and more prompt improvement in the blood but often do not cause as much improvement as intraperitoneal transfusions. Blood may also be given every 24 to 48 hours intramuscularly with good results. The main drawback to this method is, however, the discomfort produced. Siperstein states that intraperitoneal transfusion is the method of choice wherever a slow transfusion is desired as in some cases of malnutrition and severe secondary anemias in infants.

It is usually easy to increase hemoglobin from a very low figure, even as low as 10 or 15 per cent to 50 per cent, by giving transfu-

sions followed by the other measures just mentioned. It is, however, always difficult to increase hemoglobin from 50 per cent to normal and usually requires months or a year or more. Lehdorff states that very slight anemia with hemoglobin 70 per cent or above is entirely refractory to anti-anemia medicaments. He further states that in the presence of normal blood certain of these remedies are even harmful. If during treatment an infection occurs the hemoglobin and red cells promptly drop and will not rise again until there is recovery from infection. There is still a very great difference of opinion as to whether or not addition of copper is of benefit. In fact, copper as an activating agent is about to be discarded. Helen Mackay states that copper deficiency in even anemic babies is uncommon. At first it was thought that liver had no place in the treatment of secondary anemias but now there is a general agreement that liver stimulates an increase in the number of red cells but does not increase the hemoglobin. Almost all of the iron salts and also reducing iron are used.

Josephs believed in 1931 that iron has its first effect on the reticulocytes and then on the hemoglobin and there usually exists a latent period before the effect on the hemoglobin is manifested. The end of this latent period appears to coincide with a sufficient rise in reticulocytes. He states that copper appears to increase hemoglobin but has no effect on reticulocytes. The present trend is to give rather large doses of iron even to small infants. It would seem that a large percentage of this iron would be lost in the stools. Maurer and co-workers demonstrated that the positive iron balance, or the amount of iron retained in the body in infants, was not influenced so much by the amount of iron given but by certain so-called activating agents which rendered the iron available to the body. They found that copper did not increase the iron retained but that small quantities of breast milk and also liver extracts produced marked improvement in the iron balance. Snelling found that in premature infants the average daily positive iron balance was 1/10 mg.

Attention is repeatedly called to the fact that cow's milk reduces the amount of iron absorbed. Kleinschmidt even goes so far as to mention



the possibility that cow's milk lacks some quality of breast milk in influencing iron balance. The diets of anemic infants and children should be liberal and well-balanced and milk reduced to a minimum. The feeding of liver, beef juices, beef, egg yolk, vegetables, and other foods rich in iron, most probably supply sufficient copper for these children. Fruits, particularly prunes, apricots, and peaches are also mentioned as effective foods in anemia. There has not been any definite or conclusive evidence that abnormally high concentration of vitamins is helpful. Hypodermics of iron and iron and arsenic are used little if any, except when iron can not be given by mouth. Grulee found that colloidal iron as ferric hydroxide can be given in solution intraperitoneally with good results. All iron given by mouth has to be changed into the bivalent or ferrous salts in order to be dissolved and prepared for metabolism. The trivalent or ferric salts are not effective unless, of course, they are reduced by the action of the digestive juices.

After a consideration of the many opinions and methods of treating anemia the following plan is suggested as rational and effective.

1. The prevention of anemia in infants should begin by treating the anemic mother during pregnancy.

2. The prevention of anemia as applied to premature and immature infants is best obtained by giving iron and liver extract or iron and minute doses of copper daily beginning at about 2 months of age. Iron and ammonium citrate 3 grs. (.2 gm) and copper sulphate about 1/16 gr. (.004 gm) per day to the average small infant are ample doses.

3. In treating secondary anemia the first consideration should be removal as far as possible of the cause.

4. Transfusion in the beginning and repeated when necessary if the anemia is very severe.

5. Dietary rearrangement, reducing milk to about 1/2 to 1 pint a day and supplying meat, vegetables, and whole grain cereals liberally. Mead's Cereal can be used to advantage. There have also been favorable reports on Spintrate. If, however, the age or condition of the infant

or child makes liberal feeding too risky, milk must continue to be the main diet, and other foods added as digestive capacity increases.

6. There should be ample concentration of the usual vitamins in the diet but unreasonably large amounts of vitamins are not necessary.

7. Iron medication should be started early and continued daily for week or months. Ferric ammonium citrate is a soluble not unpleasant form of iron and is satisfactory in 10 to 15 gr. doses daily. The addition of copper sulphate in minute doses, although of questionable value, does no harm and might often be given with the iron in order to give the patient the benefit of the doubt. If there is not satisfactory blood improvement in 3 or 4 weeks calf's liver should be given daily in the diet or liver extract given with the iron.

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## PATHOLOGICAL CONFERENCE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 282, FEBRUARY 1, 1935

*Service of Dr. Chamberlain*

Student Sian (reading):

White male, age 63 years, unemployed iron and brass moulder, admitted 10:45 A. M., 12-5-34, died 8 P. M. of same day.

History: "Caught a cold" about 1 month ago, but has had a productive cough for about 1 year, bringing up great quantities of thick greenish yellow sputum. No fever or sweats, no hemoptyses. No anorexia or weight loss. Has "gas on stomach" frequently, occasionally nausea and vomiting. Constipated. Occasional pain over heart and palpitation, associated with shortness of breath. Only past illness is "intermittent fever." Hydrocele for 15 years.

Examination: Temp. 98, pulse 130, resp. 40, B. P. 175-90. An elderly man, with cyanosis, and marked engorgement of veins, of neck. Veins of both upper extremities are engorged, and "large snake-like veins may be seen over abdomen and extending up over chest wall." Pupils contracted, react sluggishly. Tonsils and pharynx negative. Chest: Percussion flatness on right posteriorly, with diminished breath sounds. Tubular breathing on right anteriorly, with crepitant rales. On left, some diminution in resonance. Fine and coarse rales throughout entire lung fields. Mediastinum "apparently widened." Heart: "enlarged." Regular in rate and rhythm, tones of good quality. No murmurs heard. Some thickening of vessel walls. Abdomen: Liver enlarged to umbilicus, and tender. Spleen not felt. "Enlarged tumor mass in left side of scrotum. Firm and painless." Prostate not enlarged. Reflexes: "extremely sluggish or absent." No abnormal reflexes obtained. Eye-grounds: engorgement of retinal veins, possibly some slight edema of disc.

Laboratory: Hb. 85 per cent (D); W.B.C. 15,250; polys 72 per cent; lymphs 24 per cent;

monos 4 per cent. No further laboratory data obtained.

Progress: Temperature rose to 100.2 at 4 P. M., pulse 110, resp. 40. His respiratory difficulty grew worse, and cyanosis increased, with drenching sweat. Pronounced dead at 8 P. M. of day of admission.

Dr. Chamberlain (conducting): Mr. Shealy, will you give your idea of this case?

Student Shealy: The distended veins over arms, chest and abdomen suggest some form of venous obstruction, probably in the mediastinum. The man's age suggests malignancy as the cause. Aneurysm could give the same picture, but there should be more physical findings if the aneurysm were giving almost complete obstruction of the superior vena cava. This history of a productive cough for one year suggests some chronic chest condition. The lack of such symptoms as anorexia, fever, sweats, and weight loss tends to exclude tuberculosis, altho not necessarily so. Tuberculosis could possibly cause such a condition, by glandular and scar tissue compression of mediastinal structures. The chest findings suggest fluid there, and this could also be easily explained on a basis of tuberculosis. However, I am inclined to lean towards aneurysm.

Dr. Chamberlain: Whatever it is, where must it be located?

Student Shealy: In the mediastinum, probably the upper mediastinum. Such an obstructing mass could explain everything in the case except the liver enlargement, and I have trouble correlating that with the other findings.

Dr. Chamberlain: By omission, you have probably considered the arteriosclerotic changes as a different process, not related to the present illness. Having excluded tuberculosis, how do you explain the cough?

Student Shealy: This probably results from the mediastinal pressure, with a resultant bronchiectasis.



Dr. Chamberlain: Do you think the gastric symptoms mentioned have any part in the present condition?

Student Shealy: I had not considered them as related directly.

Dr. Chamberlain: In connection with the possibility of malignancy, what do you note in the history and findings of possible importance?

Student Shealy: The swelling in the scrotum. The description of this mass as "firm and painless" suggests syphilis, but I believe that syphilis is not concerned in his present condition.

Dr. Chamberlain: Mr. Tobin, can you add anything?

Student Tobin: I would like to know if a Wassermann was done.

Dr. Chamberlain: No. The patient died unexpectedly, and the laboratory data is far from complete.

Student Tobin: The enlarged and tender liver suggests that the obstruction might be in the liver instead of in the mediastinum. On the other hand, if there is fluid in the chest, as would appear to be the case, this could give displacement of the liver without actual enlargement. The venous distention doubtless represents the collateral circulation established as a result of venous obstruction. As both innominate veins are apparently obstructed, the process would appear to involve the superior vena cava. Was an attempt made to determine the direction in which the veins filled, so as to be able to rule out obstruction in the liver or inferior vena cava, with collateral circulation established in the opposite direction?

Dr. Chamberlain: If so, it was not recorded on the chart. I didn't get to see the patient, as he was admitted after I had made rounds, and died during the same night. Let's ask the Anatomy Department if the valves in the veins will permit blood to flow in either direction.

Dr. Lassek: In a man of this age, especially with such dilated veins, the valves would be incompetent, and permit blood to flow in either direction.

Student Tobin: The distended retinal veins are a further indication of obstruction of the superior vena cava. If this is by a malignant tumor, it would be either primary or secondary. If secondary, the primary tumor could well be

in the scrotum, altho the abstract leaves the question as to whether that is mass or hydrocele.

Dr. Chamberlain: Miss Willis, will you discuss the chest findings?

Student Willis: These findings rather suggest tuberculosis, but the lack of correlated symptoms would tend to rule this out, as suggested by Mr. Shealy. The man's work suggests the possibility of an occupational dust disease, altho I note that he has been unemployed recently. Too, simple pulmonary congestion from venous stasis, could cause the productive cough. And a mass, to obstruct the superior vena cava, might well obstruct the bronchi, giving bronchiectasis or even lung abscess; he does not seem toxic enough for the latter, however.

Dr. Chamberlain: The widened mediastinum does suggest such a mass. Would anyone else suggest anything?

Student Lemkin: Is the apex beat located? A determination of this would seem important, since the possibility of fluid has been considered.

Dr. Chamberlain: That would be of value, but it is not recorded.

Student Lemkin: I believe that the increased blood pressure might be connected to the present condition, representing an attempt on the part of the arterial system to overcome the venous obstruction.

Dr. Lynch: Wouldn't it rather be that tissue anoxemia tended to increase the rate and force of the heart's action? Will the Physiology Department discuss increased heart action in an attempt to overcome venous obstruction?

Dr. van de Erve: I believe that tissue anoxemia would be the most important factor. But Bainbridge's reflex, acting by the increased pressure in the superior vena cava, would also bring about an acceleration of the pulse, and an increase in heart action. I doubt if this would give as great an increase in blood pressure as is seen here.

Dr. Chamberlain: And theoretically, at any rate, pressure on the cervical sympathetic chain in this case might account for a rapid pulse. I would believe, however, that the increased blood pressure was already present, and that it was not brought about by the venous obstruction.

The subject has been well covered except for the enlargement of the liver. Will anyone comment on this?

Dr. Cannon: The fact that the liver is tender as well as enlarged suggests that enlargement has taken place suddenly. Sudden enlargement of the liver is rare with malignancy there. If I could be satisfied that the scrotal enlargement were not a malignant tumor, I would lean towards aneurysm to explain the whole picture: venous compression, cough and hydrothorax. His mode of death certainly suggests respiratory difficulty.

Dr. Lynch (demonstrating autopsy specimens): This is a very unusual case, but two things can be learned from it.

First, syphilis can do anything. This man had a syphilitic infiltration in and about his superior vena cava, beginning about 3 cm. above its termination, and extending upward. At its narrowest point it would barely admit a small probe. The infiltration extended up into the right side of the neck, along the right innominate vein, with extensive infiltration of surrounding structures. At autopsy the process was thought to be syphilitic and not tuberculosis or malignancy (altho either could conceivably do the same thing), because the lymph glands were apparently not involved. This assumption was confirmed on microscopic examination.

Most of the class is familiar with this case, as they saw the autopsy, but I will run over a few of the things noted. The head and shoulders were intensely cyanotic and edematous, and the thoracic and abdominal veins were markedly enlarged and tortuous. The capillary system was so distended with blood that the autopsy incision bled readily, a very unusual thing. There was at least 1000 cc. of clear amber fluid in the right chest, with somewhat less in the left. The seeming enlargement of the liver was merely downward displacement; at autopsy the edge of the liver was noted at the iliac crest, but the liver itself was not enlarged. The mechanical collapse of the lungs by these pleural effusions added greatly to the respiratory embarrassment.

The interne who examined this patient on admission was under the impression that the scrotum contained a malignant tumor, and that

metastasis had occurred both to the liver and the mediastinum. Such an assumption is not necessary to explain the enlarged and tortuous veins, and such an occurrence would be very unusual. The absence of ascites would certainly go a long way to rule out portal obstruction. As a matter of fact, the testicle was not enlarged; it was rather compressed by an accumulation of clear fluid in the tunica vaginalis. Evidences of syphilis could be found microscopically in the tunica.

Examination of the head was not permitted, but it can be assumed that stasis there would be nearly complete. Anoxemia of the brain was doubtless the immediate cause of death in this case.

Dr. Prioleau: What was the source of the purulent sputum?

Dr. Lynch: In the absence of gross or microscopic evidence of disease of the lungs and bronchi, this must be assigned to venous congestion.

A thing which I had neglected to bring out was the involvement of the thoracic duct in this case. It and all its tributaries were markedly dilated. This obstruction to the lymphatic drainage from the thorax was probably an important factor in the development of the bilateral hydrothorax. The venous obstruction also prevented the normal drainage of the parietal pleura by the intercostal veins, and this also tended to permit the development of hydrothorax. The venous drainage from the peritoneal cavity could be handled by the inferior vena cava, so that ascites would not develop.

The second thing of general importance to be learned from this case is the method of detouring the venous circulation when normal channels are obstructed. Dr. Lassek of the Anatomy Department will describe this.

Dr. Lassek (demonstrating lantern slides): To understand the compensatory mechanism by which the upper part of the body can be drained when the superior vena cava is obstructed it is necessary to comprehend the possible venous anastomotic channels between the superior and the inferior vena cava.

The superior vena cava is formed by the union of the right and left innominate veins. Each innominate vein is formed by the internal



jugular and the subclavian from that side. The subclavian is the continuation of the axillary vein from each arm. With complete occlusion of the superior vena cava, the most prominent route for the establishment of a collateral circulation would be from the axillary to the femoral via the superficial veins on either side of the trunk (from above downward, the lateral thoracic, thoraco-epigastric, and the superficial epigastric). The femoral, of course, empties eventually into the inferior vena cava.

This last slide illustrates the lymphatic system. The thoracic duct and the right lymphatic duct terminate in the venous system at the junction of the internal jugular and the subclavian veins on their respective sides. The lymphatic drainage would be hindered in this case by the occlusion of the superior vena cava, and the high venous pressure could keep the terminal valves of the lymphatic ducts closed. The strength of these valves is proven here, as there was no blood in the lymphatic system.

## EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

### UNTOWARD RESULTS OF T. & A. DUE TO ALLERGIC AND ENDOCRINE IMBALANCES

*J. A. Haiman, M.D., Eye, Ear, Nose and Throat Monthly, Jan. 1935, p. 39*

To some it may seem unnecessary to discuss any phase of the tonsil question. But as a final analysis tonsils are removed or should be removed to cure certain conditions; some of these conditions are susceptibility to colds, including sinusitis and bronchitis. Though some forms of sinusitis may antedate the tonsil infection and even be a cause of the infection in the tonsils.

Sinusitis causes the cilia to disappear and the epithelium to change from the columnar type to the stratified type. It also causes the secretion to become mucopurulent, thick, ropy, tenacious and irritant.

Nasal mucosa is water logged and nasal breathing is interfered with. According to Dr. L. W. Dean, sinusitis is common in children. This rhinitis that persists or sinusitis that is caused may not be caused by the tonsils at all. But either or both may have an allergic basis. Therefore before removal of tonsils, especially if a rhinitis or sinusitis is present, the patient should have a history taken with reference to allergic factors. The history should be particular to include:

1. Whether either parent is allergic, for

hereditary allergy plays an important part in the etiology of many of these infections.

2. If there be an endocrine imbalance.

3. If the blood calcium be deficient calcium may then be given intravenously.

4. Foods should be investigated as well as pollens, and bacteria. Foods are important for milk, eggs, fats, starches, condiments or fish may cause the trouble. (I now have a case that has an angioneurotic edema of the face every time he eats fish.) One should try each elimination for two weeks to test whether that food causes trouble.

5. Sinusitis.

Dr. Haiman thinks sinusitis is fairly frequent in children. But he does not believe in puncturing the antra as soon as Dr. Dean. He advises antra punctures and irrigation only in those cases where X-ray reveals marked persistent clouding of the antra and when local treatment and suction has not eliminated the purulent secretion.

But one of the chief reasons for drawing attention to Dr. Haiman's paper is to call attention to a fact that we may at times overlook. That fact is that the cause of recurrent or persistent attacks of rhinitis or sinusitis may often be found to be from an allergic or endocrine imbalance, rather than from tonsillar pathology.

This persistent rhinitis or this sinus infection may not be due to diseased tonsils. But either the rhinitis or the sinusitis may have an allergic basis.

## SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

### “OPERATIVE PROCEDURES FOR APPENDICITIS”

In this column an attempt is made to present the best surgical thought of the day. Unfortunately there is no absolute standard to guide us. What is considered best is both a matter of individual opinion, and varies under different conditions. This is by way of explanation of the somewhat divergent opinions quoted from time to time.

Not many months ago there was published in this column the resume' of an article in which the author deprecated the routine use of the McBurney incision for appendicitis. The contentions were that it often gives insufficient room; that frequently the diagnosis of appendicitis can not be made sufficiently accurately to warrant such a limited exposure; that other simulating conditions may be easily overlooked, and finally that in the cases of so-called chronic appendicitis, the symptoms are frequently due to some other cause. The foregoing is based upon sound reasoning and experience. It is certainly the truth, though it may not be the whole truth.

On the other hand we have the opinion of Dr. Mont R. Reid with conclusions formed after an analysis of over 2000 cases of acute appendicitis in the Cincinnati General Hospital. (S. G. & O. LIX: 529—Sept. 1934). From 1915 to 1922 operations for acute appendicitis were performed through a rt. rectus incision. During this time 409 cases were operated upon with a mortality of 9.8 per cent. In 1922 the McBurney incision was adopted for acute appendicitis and has been used exclusively since then. During this time there have been 1626 cases with a mortality of 5.2 per cent—a decided decrease. While other factors remained essentially the same, the only definite change in the treatment of the cases was in the type of incision employed. For this reason the author brings up the question of whether the surgical technique of appendectomy is playing a more important part

in the mortality statistics than is generally recognized. He points out what he considers are the recognized advantages of the McBurney incision: (1) there is less soiling of the peritoneal cavity; (2) there is less necessity for handling the intestines, for usually it is necessary to touch only the cecum and the appendix; (3) the use of gauze packs can be almost eliminated; (4) drains can be placed along the parietal peritoneum and they soon become extra-abdominal; (5) wound complications are less; (6) convalescence is shorter, and (7) the healed wound is less disabling.

The point is brought out that even though the diagnosis of appendicitis is in error, most conditions simulating it can be detected or adequately cared for through this incision. However should this not be the case, a second incision may be made, the patient having suffered very little harm from the McBurney incision, which often may be used for drainage. In cases of so-called chronic appendicitis, it is the author's policy to remove the appendix through a McBurney incision, with the preliminary understanding that if the symptoms are not relieved, an exploratory laparotomy will later be necessary.

*Ed Note:* The foregoing practice is based upon the following premises—(1) that the McBurney incision is a relatively minor affair compared with the straight incision as to both mortality and morbidity; (2) that the diagnosis of acute appendicitis is accurate in the great majority of cases—and in most of the remaining group the condition can be cared for through this incision or is of a type for which operative interference is not indicated; (3) in the so-called chronic case, the symptoms are relieved in a sufficient number by appendectomy to warrant this as a trial procedure. The facts are given as cited in the literature. There are distinct advantages for both the McBurney and the straight incision. The question comes up as to whether either type should be used routinely in cases diagnosed as acute appen-



dicitis. In considering the subject it must not be lost sight of that many other factors besides the operative procedure enter into the morbidity

and mortality of these cases. The choice of incision will have to be made by each individual according to his own lights.

## OBSTETRICS AND GYNECOLOGY

J. D. GUESS, M.D., GREENVILLE, S. C.

### THE CHRONICALLY INFECTED CERVIX UTERI

There is undoubtedly some question as to what should be the attitude of the general practitioner, yes, and of the specialist as well, with regard to treatment of the cervix uteri. So far as this applies to examination and suture of the cervix immediately after childbirth, there is much ground for question, and in the opinion of the writer it is the wiser practice not to expose the cervix of such a patient to examination except in the delivery room of a well appointed hospital or exceptionally, in the patient's home, where there is serious bleeding, not controlled by a strongly contracted uterus.

However, in other patients, the writer is just as strongly of the opinion that the cervix should always be examined and if diseased that treatment should be instituted.

"Female trouble" has ever offered a fertile field to the quack and to the patent medicine manufacturer and no doubt many a dollar has been spent and many an hour wasted for treatments that were no more than ignorant piddling on the part of regular, but untrained, practitioners.

Perhaps, because of the feeling that these facts have resulted in attaching a stigma to office gynecological treatments, there has been a tendency on the part of some well trained and conscientious men to avoid this type of treatment.

Infections of the cervix are deep seated and persistent. The glands of the endocervix are deep and branching. Cervical infections are relatively rare in virgins and are most frequent in parous women. Deep or even minor lacerations of the cervix, with greater or less exposure of endocervical mucosa to vaginal secre-

tions, traumatism by contact with vaginal walls and during sexual intercourse and by douche tips tend to result ultimately in infection of the cervical glands. Infection of the cervix is almost always, except in little girls, a part of clinical gonorrhea.

Although cervicitis is a local disease it is not without remote or systemic effects. The infected cervix is now considered a focus of infection, with all the significance that that term implies. Cervical infection is frequently accompanied by inflammatory infiltration of the utero-sacral ligaments, with resulting debilitating backache. Cervical cancer is undoubtedly predisposed to by the chronic irritation incident to chronic infection. The discharge resulting from cervicitis is uncomfortable and unsanitary. Finally, cervical infections tend toward sterility and are frequently its sole cause.

Local applications of various antiseptic substances are not curative. These solutions can not possibly reach the depth of the glands where the infection persists. High amputation of the cervix at one time offered the only reasonable assurance of cure. This operation required hospitalization, resulted in stenosis of the uterine opening in a large percentage of cases, and if subsequent pregnancy occurred abortion was the rule. The operation could not be done indiscriminately and when possible it was reserved for women past the childbearing age.

Some years ago Sturmdorf described a technique for coning out the cervical mucosa up to the level of the internal os and covering the denuded canal wall with a sliding graft of external cervical mucosa. This operation represented a great step forward in the treatment of chronic endocervical infection. It is followed infrequently by troublesome stenosis and does not

give rise to abortion in subsequent pregnancies. It does require hospitalization. The technique is somewhat difficult. Post-operative hemorrhage at times spoils the operation, and frequently a few infected glands are left high up within the cervix.

Cervicitis can be treated, and treated successfully in the office. The treatment is ambulatory. It is relatively inexpensive, and in most cases it is more thoroughly efficient and satisfactory than is more elaborate operation.

There are three outstanding types of treatment one may select from. Each has its advocates, who claim for it superiority over the others. At times two may be combined in the same case. Usually it is a matter of personal preference guided by one's experience and equipment.

The first of these methods is repeated linear cauterization, using a small loop cautery. The equipment is inexpensive and the technique is not difficult to learn. The method is more efficient in infected erosions or ectropion of the cervix than it is in high endocervical infections. There are rarely any unpleasant after effects. Its use requires no anesthesia.

The next method is by means of surgical desiccation of the endo-cervical mucosa using one of the special types of cervical electrodes. This requires a diathermy machine. It is very efficient. The technique is not difficult to learn, and it is not dangerous to use if one exercises reasonable care and understands his machine reasonably well. The treatment may be followed by secondary hemorrhage, easily con-

trolled with a vaginal pack. It infrequently results in moderate stenosis, which can readily be overcome with a few gradual dilatations with sounds. Surface anesthesia with cocaine or one of the newer anesthetic agents is required. It does not result in dystocia in subsequent pregnancies. The endocervical mucosa with its glands are destroyed by desiccation. The treatment is followed first by a discharge of the destroyed tissue, and then by a relining of the canal by regeneration of the mucosa.

The third method referred to requires still more expensive equipment. It consists in the coning out of the cervical canal with the cutting electrical current, carried on a specially designed wire loop electrode. Surface anesthesia is all that is required. There is no immediate bleeding and seldom any secondary bleeding. The mucosa and its glands are cleanly removed. The canal subsequently becomes relined with new epithelium. There is rarely any resulting stenosis and the method is said to result in no dystocia in labor.

With these three methods of efficiently treating chronic cervical infections readily available women should no longer be deprived of the benefits of treatment. The family physician should look for evidences of these infections. The internist should never fail to examine the cervix. The general surgeon who, in South Carolina, performs the greater number of gynecological operations done, should not forget the cervix when called upon to treat a more obvious lesion of the pelvis.

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## - - SOCIETY REPORTS - -

MARLBORO COUNTY MEDICAL SOCIETY  
ANNUAL NEW YEAR'S MEETING AND BAN-  
QUET, HELD FRIDAY AFTERNOON, JANU-  
ARY 11, 1935, AT 5:00 O'CLOCK, MASONIC  
TEMPLE, BENNETTSVILLE, S. C.

### *Program*

1. Address—Dr. William Eggleston, Pres. S. C. Med. Assoc., Hartsville, S. C.
2. Brief Comments on the Lure of Medical History—Dr. Edgar A. Hines, Sec. S. C. Med. Assoc., Seneca, S. C.
3. Allergic Phenomena—A Review of One Hundred Cases—Dr. Foster M. Routh, Columbia, S. C.

### *Dinner in Banquet Hall*

4. Some Present Day Trends in Psychiatry—Dr. Charles F. Williams, Columbia, S. C.
  5. The Behavior of the Bladder in Health and Disease—Dr. Austin I. Dodson, Richmond, Va.
  6. Self Inflicted Injuries in Civil Practice—Dr. Julian Deryl Hart, Durham, N. C.
- Dr. D. D. Strauss, Sec.  
Bennettsville, S. C.

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SYNOPSIS OF PEDIATRICS, By John Zahorsky, A.B., M. D., F.A.C.P., Prof. of Pediatrics, St. Louis University Medical School. Fabrikoid. Price \$4.00. Pp. 359, with 77 illustrations and 6 color plates. St. Louis. C. V. Mosby Company, 1934.

It is not surprising that so excellent a clinician as Dr. Zahorsky, nor that one who has had so much experience in pediatrics, should be able in a small volume of 60 compact chapters to cover the field. The work is of course concise and extremely practical, there being little space allotted to vague theories or abstractions. However, with-

out in any way attempting to compete with the large works or systems, it is sufficiently comprehensive.

If the medical student or the general practitioner is fortunate enough to get into his head most of its contents, it will be very well for his little patients.

The paper is excellent, and the type clear. The heavy black type headings of the paragraphs and the full index permit quick reference.

Doctor Zahorsky and the publishers should be well pleased with their offspring.

R. M. Pollitzer, M.D., F.A.A.P.

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## BOOK REVIEWS

**MOUTH INFECTION. CLINICAL HISTORIES,** by Oliver T. Osborne, M.A., M.D., F.A.C.P., Professor of Therapeutics, Emeritus, and formerly Clinical Professor of Medicine, Yale University, New Haven, 1934.

It is significant that such a distinguished Internist should publish a monograph on this subject, for perhaps the general diagnostician has good reason to be impressed in his daily contact with patients of the relation of medicine to dentistry. The author makes a pretty thorough presentation of the whole subject in the one hundred and nineteen pages of the book. The Yale press has done a good job, also. The price of the book is two dollars. The author has very decided views about the tonsil question. He considers the infected tonsil a major menace and its removal a major operation. He pleads for complete enucleation and is not in favor of anything but a strictly surgical procedure. He states frankly that too many tonsils are removed from children meaning that more care should be taken in deciding upon the indications. The author has written extensively on the subject in hand and is a pioneer in fact. He has clear cut ideas about tooth infections just as he has about tonsils. He says every dead tooth is a menace. Many clinical cases are given in the book to substantiate the author's views.

**DEFINITE DIAGNOSIS IN GENERAL PRACTICE,** by W. L. Kitchens, M.D., with a Foreword by John H. Musser, B.S., M.D., F.A.C.P., Professor of Medicine in The Tulane University of Louisiana School of Medicine. Philadelphia and London, W. B. Saunders Company.

This is one of the most remarkable books recently published. As an index of symptoms it probably has no superior. These symptoms have been summarized for four hundred and seven disease entities. Of these diseases the author states that he has noted five hundred and six symptoms of definite diagnostic value. Upon these common diseases and symptoms the work has been built. The idea is to provide a volume so that the doctor may have a quick reference book at his elbow and again to be of great value in making a differential diagnosis. It is a volume of four hundred and forty three pages. The print is large and easily read. There are blank spaces for the reader to make notes from his own observation.

It is remarkable in how many diseases certain symptoms may be found. Of course pain looms large in a work of this kind and it is an important matter in the practice of every doctor and not always easy to account for. But this book will help tremendously. Take for instance headache. It is amazing when one considers the multitude of diseases in which headache is a prominent feature. Under the head of diseases with symptoms applied there is a wealth of information. Take for instance Aortitis, the symptoms are far more extensive than one may think and thus the condition overlooked. Then, again appendicitis acute and chronic is not always so easy to determine with certainty for here again the symptoms may be quite extensive in distribution. And so it is all through this excellent resume of the busy doctor's practice. The laboratory findings have been carefully orientated without undue emphasis. With the mastery of a book like this, any doctor will find that he rarely needs the highly specialized methods of diagnosis, to point the way, for a solution of his problems.

**HOW TO PRACTICE MEDICINE,** by Henry W. Kemp, M.D., New York, Paul B. Hoeber, Inc., New York, McMXXXV.

The author from a large experience has a good many practical points to suggest to the young doctor beginning practice. It is a difficult matter, however, to evaluate the customs of the profession in widely separated sections of the country and blaze new trails for the young doctor settling therein, however, there are some basic principles necessary to keep in mind from a practical standpoint regardless of where the young doctor may locate. If he is wise he has acquainted himself with many of these by his contacts with older doctors prior to completing his internship. Books help but the larger school of experience cannot be displaced by the advice of anybody one hundred per cent when it comes to the actual practice of medicine. Many medical schools now undertake to advise their students on economic problems they will face in the practice of modern medicine. Many schools instruct their students in the history of medicine now. Both of these important subjects should long ago have concerned medical schools. Most graduates of Class A schools now are quite well equipped to practice medicine in any community.



# Westbrook Sanatorium

Richmond, Virginia

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## *Associates*

THE SANATORIUM is a private institution with 150 beds located in the Ginter park suburb on the Richmond-Washington National Automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

THE PLANT consists of fourteen separate buildings, most of which are new, located in the midst of a beautifully shaded 50-acre lawn, surrounded by a 120-acre tract of land. Remoteness from any neighbor assures absolute quietness.

THE LARGE number of detached buildings makes easy, satisfactory and congenial groupings of patients. Separate buildings are provided for men and women. Rooms may be had single or *en suite* with or without private bath. A few cottages are designed for individual patients.

THE BUILDINGS are lighted by electricity, heated by hot water, and are well equipped with baths.

THE SCOPE of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Five physicians reside at the sanatorium and devote their entire attention to the patients. A chartered training school for nurses is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

SYSTEMATIZED out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

THE SANATORIUM maintains its own truck farm, dairy, and poultry yards.

*Illustrated Booklet on Request*

# THE JOURNAL

of the

## South Carolina Medical Association

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Published Monthly Under Direction of the Board of Councilors.—Annual Subscription, \$3.00.

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## EDITORIAL

### SOME HIGH SPOTS OF THE FLOR- ENCE MEETING, APRIL 23, 24, 25

The eighty-seventh annual meeting offers many attractions to the busy doctor. The Program Committee worked hard to provide a practical program for the general practitioner. The committee abandoned the time honored symposium idea for individual papers of more than ordinary interest. The guests are among the most distinguished medical men in this country. They are all professors in great medical schools—Harvard, Cornell, and Temple University.

The attendance should be large. The Pee Dee doctors are noted for their hospitality, and the Association has never failed to enjoy it.

#### *Woman's Auxiliary*

Nearly every state medical society now has an auxiliary. It is agreed that the influence of the doctors' wives lends a charm to our meetings that increases the general attendance.

#### *The Public Health Meeting*

For many years the Public Health meeting has grown in importance as well as numbers. Something like one hundred public health workers attend, and an increasing number of our members go early to be present.

#### *Commercial and Scientific Exhibits*

Every effort has been made by our exhibitors to keep step with modern medicine. This is a growing feature too every year.

#### *Special Features of This Journal*

Aside from the regular write-up of the place of meeting the scientific papers are of considerable interest. It will be recalled that the Association is now sponsoring a Cancer Campaign and much progress has been made. In this issue the paper by Dr. Wellbrock is timely in view of the campaign under way.

The Journal is most fortunate in having avail-



able a report of the Pathological Conferences at the Medical College. These case reports are of such calibre as to challenge the best medical minds in the Association. A good doctor never ceases to be a student, and here is an opportunity that only a few journals offer for close contact with medical education. The article by Dr. Hearin is of special moment, since the Association is taking steps now to lower the maternal morbidity and mortality rate this year.

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#### THE POST GRADUATE OBSTETRICAL COURSES NOW UNDER WAY

We are glad to announce the successful inauguration by the Association of the State-wide obstetrical courses for South Carolina doctors by Dr. J. R. McCord, Professor of Obstetrics at Emory University, Atlanta, Georgia. The

places and dates thus far arranged are as follows, also, the schedule of lectures:

Anderson, April 15; Spartanburg, June 24; Columbia, July 8; Orangeburg, July 22; Florence, August 12; Kingstree, August 26; and Charleston, September 9.

#### WEEKLY SCHEDULE

##### *Moving Picture Demonstrations*

Monday, 2 P. M. The Mechanism and Management of Normal Labor.

Tuesday, 2 P. M. The Toxemias of Pregnancy and Chronic Nephritis.

Wednesday, 2 P. M. Puerperal Sepsis and Syphilis and Pregnancy.

Thursday, 2 P. M. Occipito-posterior Presentation, Breech Presentation, Forceps and Versions.

Friday, 2 P. M. Abortions, Placenta Previa and Accidental Separation of the Placenta.

## Some Facts About Florence the Place of Meeting

### LOCATION AND GROWTH

Florence is strategically located in the very rich Coastal Plain Area of lower South Carolina, known as the Pee Dee Section.

Population in 1900, 4,647; 1910, 7,657—a gain of 65.2 per cent; 1920, 10,968; 1930, 14,774.

Directory estimates 1935, 21,000—a gain of 40 per cent in five years.

For 40 years fastest growing community in the state.

Commission form of government.

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500,000 people live in a radius of 50 miles.

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Undeveloped water power available.

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Unexcelled transportation facilities.

Plenty of labor available with no foreign element.

Social and living conditions unexcelled.

Raw material available:—Cotton—Tobacco—Hard and Soft Wood.

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Florence is on the main line of the A.C.L. Railway, which has double track.

Florence is on a branch line of the S.A.L. Railway.

Florence has over 50 passenger trains entering and leaving daily, and has over 55 freight trains entering and leaving daily.

Florence has wonderfully advantageous train schedules and shipping facilities.

Florence has 7 branch lines operating and radiating from here.

Florence has the largest freight transfer business in the state.

Florence has bus lines to supplement train service.

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Two title, trust and investment companies.

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Postal receipts \$55,000 annually.

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Boys Industrial School.

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South Carolina Peach Association.

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Junior  
High School



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The  
Florence School  
System



100%  
4H Club



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Country Home Built in 1780



## HOSPITALS OF FLORENCE

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Members of the Association are invited to inspect this building.

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The Florence Eye, Ear, Nose and Throat

Hospital is also well equipped and an important institution of its kind.

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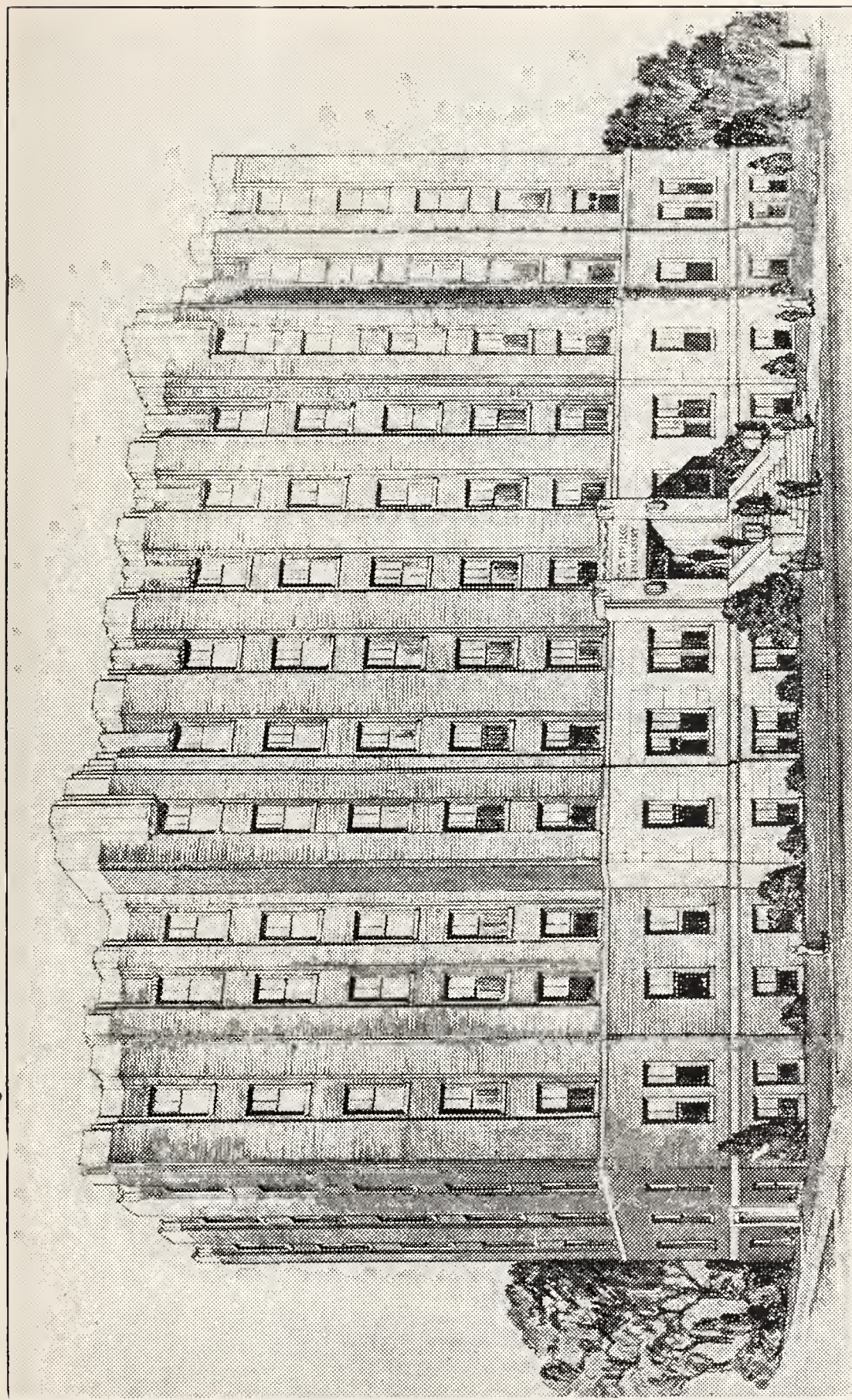
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## ORIGINAL ARTICLES

### Clinical and Pathologic Consideration of the More Common Lesions of the Breast

*William L. A. Wellbrock, M.D.,*

*Section on Surgical Pathology,*

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This paper, which is a general clinical and pathologic discussion of the female breast, is based on a study of more than 600 specimens which have been removed surgically at The Mayo Clinic. Fresh and fixed frozen sections were used.

#### MASTITIS

The term mastitis is used to describe many physiologic and pathologic mammary conditions other than real infection; true mastitis is comparatively rare. Masquerading under the term "mastitis" are such conditions as mazoplasia (Cheattle) and involutional changes. Mazoplasia is nothing more than a mild dilatation of the ducts which are lined by hyperplastic epithelium. The condition is physiologic rather than pathologic. The breasts usually are painful, and the condition affects women who have not reached the menopause. The involutional changes are the senile breast and the adipose breast, which may be a local, unilateral, or bilateral adipose change, or a part of a general adiposis. Some painful breasts which are classified as mastitis cannot be explained on a physiologic or pathologic basis but may be part of a general psychic or neurotic state, or may be associated with diseases of the ovaries.

Mastitis may be parenchymatous or interstitial. Parenchymatous mastitis may be divided into simple, infectious, and senile. The parenchymatous mastitis that is caused by stasis is the result of irritation from retention of secretion, particularly in lactating breasts. Because stasis favors infection, there is danger of secondary suppuration in this simple masti-

tis. Stasis also may occur during menstruation. In infectious mastitis, organisms invade the breast; the portal of entry is usually: (1) through the nipple; (2) through the lactiferous ducts; (3) through the lymph channels along these ducts and (4) in rare instances by metastasis.

Infectious parenchymatous mastitis usually occurs during lactation. The epithelium at the ends of the ducts is usually destroyed and this causes a migration of leukocytes, which results in a series of lobulated nodules which are painful. The inflammation may subside, or it may progress and an abscess may form.

Interstitial mastitis is caused by organisms, which enter the breast from the nipple and spread by way of the lymph channels along the ducts into the depths of the interstitial tissue, where they produce cellular infiltration and edema. The glandular parts may be involved secondarily. Resolution may occur or the condition may progress and an abscess may develop.

In chronic mastitis the induration is caused by infiltration of small round cells, and the dilated ducts and acini produce a sort of chronic cystic mastitis. The cysts are usually small, but may be of considerable size, and their contents vary from watery, mucoid, cloudy, cream-like fluid to a caseous, grumose material which is brown or green in color. The epithelium either proliferates or desquamates. The material behind the obstruction of the ducts stagnates and occasionally contains fatty acid crystals. Granulation tissue which contains giant cells, may form in the periphery of an acinus and may be mistaken for tuberculosis.

A cystic mastitis in which there are large numbers of small rounded cysts, frequently develops in one or both breasts. Such a breast feels as if it contained a bag of shot or marbles. Some of the cysts may coalesce and form larger ones. The cystic contents may be greenish and viscid, or they may be serous and bloody if the cyst is isolated.

There are a number of views concerning the origin of this type of cystic mastitis. It may

be a chronic mastitis with the formation of cysts. It may be a neoplastic process and therefore is spoken of as cystadenoma and polycystoma because there is a distinct epithelial lining. The cysts may be the result of malformations, which follow embryonal growth, and which are similar to those that produce sebaceous cysts. Peculiar pale epithelial cells, which are occasionally seen, may give some proof to this hypothesis. This form of cystic mastitis should be so designated only when the cysts are as predominant in the macroscopic picture as they are in cystic or polycystic kidneys. The cysts must be differentiated from retention cysts, which include the galactoceles.

When lactation is interrupted, involution occurs until the breast is restored to a structure which is composed of ducts and a few acini that contain a number of undifferentiated groups of round cells. There is an increase in the perilobular connective tissue, which may choke the ducts or acini, and which may lead to retention of secretion and the production of small or large cystic structures. This change may be localized or generalized. If it is localized a lump appears, which is difficult to distinguish from a true tumor. Such a structure may remain for many years after the last lactation, without any appreciable change in size. Inflammation may occur secondary to a cystic structure.

Interstitial mastitis is characterized by a diffuse interstitial productive inflammation and a new growth of connective tissue about the ducts, lobules, and acini. When it affects a circumscribed portion of the breast, the condition resembles a true adenofibroma or a fibromatosis but there is not any encapsulation. Exacerbation may occur at menstruation, when the breast becomes painful and the axillary glands enlarge, after which the process subsides and leaves new nodules. After a long time, contraction and sclerosis occur and cause the overlying skin to become rough, adherent, and contracted. Usually, there is an increase in elastic tissue about the acini and ducts. A cyst or a carcinoma may develop in such a breast. In the more acute stage there is a diffuse cellular infiltration and a collection of cells and debris around the acini and in the ducts.

The natural history of the breast includes a

terminal stage of atrophy, which usually is spoken of as "senile mastitis." This condition begins at the menopause, continues through life, and is associated with the decline in the nutrition and function of other sexual organs. The breast is greatly reduced in size because of the reduction in fat; the cellular connective tissue becomes fibrous and hyaline, and the lobules of the gland are reduced to a scarcity. During this involutionary process, a dilated acinus or duct may form a small cyst, which usually remains small. In many cases the process is marked by desquamation and proliferation of the lining cells of the ducts, or the cuboidal or low columnar epithelium may produce short outgrowths in the form of papillary projections. This epithelial proliferation in a breast, which is otherwise atrophic, may account for painful breasts, particularly those which affect women who are more than forty years of age. This may occur in one breast or in both.

The common form of productive mastitis or adenofibromatous hyperplasia is marked by the production of small cysts by epithelial proliferation and diffuse increase in fibrous tissue. The prominence of the glandular mastitis and the presence of many cysts has led to the use of the term cystic mastitis. It also is often called Schimmelbusch's disease. The disease usually begins in one breast and then affects the other breast. The onset is slow and painless, and is not recognized until a cyst of large size attracts attention. There may be a serous discharge from the nipple and the nipple may be retracted. The process is usually progressive. The cysts may be small and very numerous, and their contents may be serous, bloody, or inspissated.

The pathologic picture presents a great many abnormalities. There may be nodular thickening about the small ducts. The tissue between the acini is sometimes infiltrated with lymphocytes or plasma cells. A small area of embryonal type of epithelium may be seen in an acinus. The epithelium is usually proliferative and the acini contain two rows of well-developed cells. More pronounced growths produce more abundant cells, which are larger in size and have hyperchromatic nuclei. All the acini and ducts in a lobule may show this



overgrowth, while adjoining lobules are normal or atrophic. When dilated acini or ducts become filled with these large well-nourished cells, which occur in compact masses or form secondary alveoli or ducts, there may be a suspicion of malignancy. Cysts are formed from dilations of alveoli or ducts, and are lined with clear columnar cells. Many stages of the proliferation of these cells are seen. These may vary from the formation of low papillae and dendritic outgrowths, which are accompanied by stroma, to pronounced papilloma or a papillary adenoma. Malignancy may arise from these changes. Hemorrhage may be associated with malignant changes in the wall of the cyst.

Cysts may develop from the sweat glands in the breast which have a lining of acidophilic columnar epithelium that often is arranged in papillary formation. They may undergo malignant change.

#### PAPILLOMA

A papilloma is a neoplastic process that occurs within the duct. Papillomas may occur as single or multiple tumors, and frequently are found in both breasts. They are sessile or pedunculate growths. The dilated duct in which the papilloma is growing may be considered as a cyst which is lined by either cuboidal or columnar epithelium, and which in addition contains this papillary process. The tumor is a branched papillary adenomatous growth covered with epithelium which is similar to the epithelium which lines that particular portion of the duct from which it arises. This condition may be likened to the papillary cystadenoma of the ovary. Some of these tumors appear malignant because of their cytologic characteristics, such as large cells with hyperchromatic nucleoli and an occasional mitotic figure. Others appear to become malignant or to have a malignant tendency by invading the wall of the duct and surrounding stroma. Such a papilloma cannot be expressed; the truly benign intraductal papilloma, which is attached by a pedicle, can be expressed. Invasion of the surrounding tissue does occasionally produce the appearance of an extending neoplastic process. This may be similar to the intracystic fibro-adenoma. Papillomas are more often found in the larger ducts near the nipple, but occasionally small ones are found in the periphery of the breast.

They are sometimes associated with a diffuse mastitis, with a Schimmelbusch's mastitis, or even with an independent carcinoma.

#### ADENOMA

An adenofibroma or fibro-adenoma is a fibro-epithelial tumor which occurs in the breast as single or multiple tumors, and may be unilateral or bilateral. In the earliest stage it is seen as a small group of acini which are situated within a thickened dense stroma. These have a tendency to form whorls, but are not otherwise sharply circumscribed. Some of these tumors may be primarily adenomas while others may be previously influenced by the behavior of the stroma. Some, therefore, do contain a marked preponderance of the adenomatous element while the fibrous connective tissue element predominates in others. Those which contain a preponderance of the adenomatous component may therefore be designated adeno-fibromas, while those which contain a predominance of fibrous tissue are designated fibro-adenomas. There is a peculiar form of adenofibroma which occasionally affects young girls. The acini contain many layers of epithelium which is less differentiated than that of the usual adenofibroma, the stroma is more cellular, and the tumor softer and more vascular. Its growth is more rapid than that of the usual fibroma and it is often regarded as a malignant tumor. It is well circumscribed, lobulated, and may be designated as a fetal fibro-adenoma.

A fibro-adenoma may occur as a very large tumor, which occupies or replaces most of the breast, but more often it is a small, firm, well-encapsulated tumor. The massive diffuse tumor is illustrated in some cases of diffuse hypertrophy of the whole breast which exhibits a neoplastic character. The smaller tumor is firm, lobulated, and freely movable. These tumors usually affect young women. If the connective tissue surrounds the acini in the form of broad bands, the tumor is called pericanalicular, or if the tumor consists of complex papillary projections into the acini, it is called an intracanalicular fibro-adenoma. The latter is more friable than the former. A fibro-adenoma may become cystic as a result of dilatation of the acini. The cysts may be single or multiple, and their contents may be serous, mucinous, bloody, or fatty. In a fibro-adenoma,

a carcinoma, a sarcoma, or both may arise.

Another fibro-epithelial tumor which occurs rather frequently is the intracystic fibro-adenoma. This tumor may sometimes be papillary. It usually appears after the menopause. It is a single or multiple, rounded movable tumor which is situated beneath the nipple. A hemorrhage may occur in this tumor and cause a bloody discharge from the nipple. The structure shows a papillary growth of connective tissue which is covered with epithelium. The epithelial cells are cuboidal or columnar, and in many instances they are arranged in an adenomatous formation. These tumors may be either benign or malignant, depending on the character of the epithelium. These tumors, when malignant, have a low grade of malignancy and metastasize slowly. They usually occur singly but may be multiple. In some forms of mastitis there may be a similar process in which there is a piling up of epithelium in an acinus, which sometimes may form very small glands. Such tumors or tumefactions in some instances are indistinguishable from intraductal papillomas which have slowly invaded the surrounding connective stroma of the breast.

#### CARCINOMA

Carcinoma of the breast is a common neoplastic disease which manifests itself in many forms. It occurs at any age and affects single as well as married women. It is more often unilateral but is sometimes bilateral.

The causative factors are probably many and are not definitely known. All that can be stated positively is that carcinoma of the breast is found associated with or following, many pathologic conditions, such as the various forms of mastitis, solitary cysts, injury, pregnancy, hypertrophy, atrophy, benign tumors, and foreign bodies. There are several well defined anatomic forms of carcinoma of the breast; the specific features that characterize these forms are distinguished in the early stages, but in the late stages they are often lost and are indistinguishable from others.

Carcinoma may originate in any part of the epithelial structure of the breast and thus, anatomically, may be divided into three groups: that which arises in the squamous epithelium of the nipple; that which arises in the proximal, medial, or terminal portions of the duct, and

that which arises in the acinus. In addition, carcinoma may arise in the remnants of the sweat glands near the nipple and in the periphery of the breast.

The papillary adenocarcinoma is one of the most favorable types of carcinoma of the breast. This type of carcinoma arises either from an intraductal papilloma or from a papillary hyperplasia of the epithelium of the duct. Malignant change in either of these two conditions is evidenced by invasion of the surrounding tissue and increase in size to tumor formation. The characteristic histology is the formation of small acini and papillary projections. In a small tumor, hemorrhage may occur and may nearly destroy most of the tumor tissue. This may sometimes cause an error in the diagnosis. These tumors usually grow to considerable size in a cystic condition before they invade surrounding mammary tissue or metastasize to regional lymph nodes. True papillary adenocarcinomas grow slowly and hence metastasize late.

Adenocarcinoma which arises from the ducts may assume many forms. That which arises in the larger ducts nearer the nipple often has a feathery appearance; the cells are large with a clear cytoplasm, the nucleoli are very large and stain deeply. These tumors usually grow rapidly, are often large and soft, and occasionally may ulcerate through on the surface of the breast. Carcinoma which arises from the smaller and more distant portions of a duct takes a tubular form of growth, and attempts to imitate that portion of the duct. The cells are cuboidal or round, depending on the immaturity of the cells and the amount and condition of the stroma. Neoplasms which arise from the terminal ducts assume a still smaller tubular character; sometimes there may be only columnar cells lying in a fibrous hyaline stroma.

Carcinoma which arises from the acinar portion of the epithelium of the breast is usually solid and rather undifferentiated with variations. This type of carcinoma is usually diffuse and may originate in many acini at or about the same time, and hence is often called "multi-centric" adenocarcinoma. Sometimes, in this type of carcinoma, the center of the mass breaks down and false acini are produced. The false



lumen which is produced by the necrosis is often rather large and contains a considerable quantity of cellular debris, but the lining still consists of irregular layers of large carcinoma cells. This form of carcinoma is commonly or popularly known as "comedo-carcinoma", and grows more slowly than the ordinary type of adenocarcinoma.

An unusual type of carcinoma of the breast is the mucoid or so-called "colloid" carcinoma. It is a type of carcinoma which, as its name signifies, is composed of crescent shaped cells which have eccentric nuclei and glary whitish cytoplasm. These cells are derived from the epithelium of the duct by a process of more complete differentiation than ordinarily occurs. The onset of this type of carcinoma is rather insidious and diffuse. The growth eventually involves the entire gland-bearing portion of the breast. Before metastasis occurs, the entire breast usually is involved, but this may take several years. The entire organ becomes painlessly enlarged and has a firm uniform rubbery consistency without a definite localized tumor. This form of carcinoma is occasionally bilateral.

One of the most malicious, devastating, and fulminating types of carcinoma is the so-called "inflammatory" carcinoma. It usually affects younger women and grows very rapidly without producing any definite tumefaction. The breast becomes diffusely enlarged and painful. Metastasis occurs early.

Squamous-cell carcinoma, or Paget's disease of the breast, is not a distinct and separate disease. The epithelium of the duct is simply a continuation and transformation of the epithelium of the primitive anlage. In the more external parts of the ducts, the epithelium is continuous with the surrounding areola, while further along the duct it gradually shades into cuboidal and columnar epithelium. Therefore, this disease which originates in the squamous portion, is primarily a squamous-cell carcinoma which may, deeper in the breast, grow into one or more expanded tumors whose cells lose some of their primary squamous-cell characteristics and become cuboidal. The carcinomatous impulse is initiated in the squamous portion and is carried down to include the epithelium of the duct. It is usually the adenocarcinoma or the carcinoma of the ducts, which metastasizes. It

must be remembered, however, that two primary concomitant lesions may occur in the same organ.

The onset of Paget's disease is insidious; the condition begins usually in cracks and fissures, which refuse to heal and often secrete a discharge that causes an accompanying eczema of the neighboring areola. There is a sense of deep itching, which is followed by retraction of the nipple and local eczema. A tumor finally is found beneath the nipple. The course is extremely slow and the condition lasts many years. Metastasis is as a rule late.

#### CLINICAL CONSIDERATION

As stated before, the term mastitis is used for many physiologic and pathologic conditions of the breast, other than real infection. True mastitis is comparatively rare. It is difficult to separate chronic mastitis from chronic cystic mastitis. Benign pathologic conditions of the breast, such as localized or general cysts, hypertrophy, atrophy, and Schimmelbusch's hyperplasia, usually are accompanied by pain, with or without the localized tumefaction.

Diffuse retention of the secretion of the duct causes thickening of the secretion because of the pollution with cellular debris. This is accompanied by peri-ductal and peri-acinous infiltration with lymphocytes and plasma cells. This is often called plasma-cell type of mastitis. The secretion may appear as pus, or, if thicker, it may be putty-like as comedones; this condition is popularly known as comedo-mastitis. Any of these conditions may occur in a small area; in this case, they may be difficult to distinguish from carcinoma. The entire breast is usually very painful. Under some circumstances an area of fat necrosis which is accompanied by pain, may follow an injury.

The patient who has a benign condition of the breast complains of a lump, which usually is painful or tender. There is generalized tenderness or pain in the breast. A discharge from the nipple sometimes may be present; this may be watery, creamy, brownish, or bloody. Schimmelbusch's hyperplasia, especially if papillary, is accompanied by a bloody discharge. An intermittent serous or bloody discharge is a very significant sign of a papilloma. It must be remembered that any breast may contain several benign lesions or benign and malignant

lesions at the same time. A deep solitary cyst may simulate a carcinoma.

Approximately 71 per cent of benign lesions of the breast occur among married women, while approximately 28 per cent of these lesions affect single women. A mastitis seldom affects a girl before menstruation has occurred. Benign lesions occur about equally in each breast; 47 per cent affect the right breast and 53 per cent involve the left breast. Both breasts frequently are involved.

Clinically, carcinoma of the breast is recognized primarily by a firm tumor of variable size, which is either fixed to the underlying or to the subcutaneous tissue and which causes retraction of the skin. The fixation is most significant. Large carcinomas, which are situated near the surface, may ulcerate. Tumors which are within or beneath the nipple sometimes cause the nipple to be inverted. A carcinoma may occur in any portion of the breast, or within the nipple. Bleeding from the nipple occurs in some types of carcinoma. However it must be remembered that there is no absolute sign or symptom in carcinoma of the breast. A freely movable tumor with no fixation may prove to be malignant. On the other hand, a tumor which is fixed may prove to be a deep-seated cyst, a mastitis, or an area of calcification, which may occur in a benign tumor or an area of fat necrosis. The presence of enlarged glands in the axilla may or may not be due to metastasis.

There is only one method of making a positive differential diagnosis of a small tumor of the breast or of a doubtful mass or nodule, and that is by surgical removal and microscopic examination. It is far better to remove the entire tumor than only a small specimen, because of the possible danger of dissemination of malignant cells if a piece is excised, and also because a tumor may be partly benign and partly malignant, as is the case in some cysts and adenofibromas. A tiny carcinoma also may be found in an area of mastitis.

Pain is a variable symptom of carcinoma and usually does not occur until late in the disease. The absence of pain usually is more significant than the presence of pain. A large number of the patients who had carcinoma of the breast complained of one or more of the

following symptoms: a sensation of soreness, tenderness, burning, tightness, fullness, dragging, drawing, stabbing, burrowing, or pulsation in the breast; painful enlargement of the breast during the menstrual periods; and pain in the shoulder.

The etiology of carcinoma is not known. There are several theories; the two most plausible ones are the hereditary and the traumatic. It is interesting to note that 28 per cent of the patients who had carcinoma of the breast said that one or more members of their family had had carcinoma. In 5 per cent of the cases of carcinoma of the breast, there was a history of trauma, but the time between the trauma and the appearance of the tumor varied considerably in different cases.

The length of time that the presence of a tumor had been noted is variable. In many instances, tumors are discovered by the physician, during a routine examination when the patient had sought advice for another condition.

When a woman first consults a physician on account of a tumor in her breast, the growth usually is several centimeters in diameter, and there is the history that she first noticed the lump days, weeks, months, or even years before. In the series of cases which comprise this study, the average size of the tumor at the time of operation was 3.48 cm. In 69 per cent of the cases, it was possible to make a positive preoperative diagnosis from the size of the tumor and its concomitant signs and to perform a radical operation without biopsy. In 31 per cent of the cases of carcinoma, the tumor, a portion of the mammary tissue, or the entire breast was removed and examined microscopically, before proceeding with the radical operation. It is possible to draw two deductions from these facts: First, the patient did not seek medical aid until rather late in the course of the disease. This is evidenced by the fact that axillary metastasis was present in over 60 per cent of these cases. Secondly, a certain percentage of these patients sought aid before the usual clinical manifestations of carcinoma of the breast were present. Biopsy was the only means of making a diagnosis in these cases.

Carcinoma may affect one or both breasts. In 46 per cent of the cases of carcinoma of the



breast, the lesion involved the right breast; in 54 per cent of the cases, the left breast was affected. In 5 per cent of the cases, the patient returned at a later date with a carcinoma in the other breast. In 85.6 per cent of the cases the women were married, and in 14.4 per cent of the cases the women were single. The youngest single woman was thirty years of age and the youngest married woman was twenty-three years of age. The oldest single woman was seventy-three years of age and the oldest married woman was seventy-six years of age. The average age of the patients at the time of operation was fifty-one years, and in 62.3 per cent of the cases the patients were between the ages of forty and sixty years.

Clinically, palpable axillary lymph nodes are not always a definite indication that metastasis has occurred. Large firm or hard lymph nodes, which are somewhat fixed to the surrounding tissues, are rather indicative of malignancy. However, enlarged lymph nodes may occur in the presence of either a simple mastitis or a mastitis which is associated with, or secondary to, a carcinoma of the breast. Large soft lymph glands may be found, on section, to consist of about two-thirds fat and a rim of lymphoid tissue; because of this gross appearance, they have been called "horse-shoe glands". It is difficult to say whether this fat is a replacement or new lymphoid tissue in the making. In the presence of a malignant lesion, moderately enlarged lymph nodes often have a peculiar microscopic appearance. They consist of dilated sinusoids which are filled with endothelial cells and mast cells. These lymph nodes seem to appear to be preparing for an invasion by malignant cells. Carcinomatous infiltration of a lymph node usually begins in the peripheral sinus, which should be examined carefully in searching for metastasis. Such a gland, on gross examination, may not appear to be involved. In regard particularly to axillary nodes in the presence of lesions of the breast, I wish to quote Gulland: "Lymphatic glands are found constantly and normally on slight cause and when the circumstances calling for their appearance have passed away, they as readily disappear to be recalled into existence as need arises.

"All anatomists are familiar with the fact that the lymph glands in the axilla vary immensely in number in different normal individuals and that in pathological states the normal average may be greatly exceeded. Stiles considers that the axillary glands are much increased in number during lactation and that when the mamma returns to the resting condition or when the natural rest of the menopause occurs many of the glands so developed become involuted and transformed into fat. The change begins near the hilus and spreads outwards toward the cortex. This fatty involution is exactly the same process as that with which we are familiar in the thymus, which in the first few years of childhood is a purely adenoid organ, but later becomes more or less completely transformed into fat. In these involuted glands the distribution of lymphatic vessels is preserved unaltered for if a carcinoma appears in the breast these fatty glands again become adenoid. Not only do the glands come and go but the germ centers are equally labile." In a certain number of cases a lump in the axilla, which is particularly tender and painful during menstruation, may prove to be an accessory breast.

In regard to prognosis, there are numerous clinical and pathologic factors to be considered, as is generally known, but the two which are of greatest importance certainly are lymphatic involvement and the degree of cell differentiation. The extent and number of lymph nodes which are involved also are important. It is known, too, that certain situations or organs of the body vary in their predominance for a certain degree of malignancy. In the breast, for instance, 83 per cent of malignant tumors have been graded 3 and 4. The frequency of involvement of the lymph nodes usually is increased in direct ratio to the grade of malignancy; in 90 per cent of the cases in which the lymph nodes were involved, the malignancy of the tumor was graded 4. Likewise, death occurs earlier in those cases in which the grade of malignancy is high. This is particularly true in those cases in which there is involvement of the lymph nodes. In grading a tumor consideration must be given to experience, and to personal equation and evaluation. This accounts for border-line discrepancies.

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## Gleanings From 146 Cesarean Sections

*By Willard C. Hearin, M.D., Greenville, S. C.*

It is indeed a far cry from the cesarean sections of the sixteenth century to the sections of the present day, but there is yet room for improvement in surgical technic but the greatest achievement is to be gained with better obstetrical judgment.

Williams in his text book has very aptly divided the history of cesarean sections into five periods; the first lasting from the earliest times to the beginning of the Sixteenth Century; the second from the year 1500 to 1776; the third beginning with the introduction by Porro of amputating the body of the uterus; the fourth period extending from 1882 to the present time, following the description by Sanger of an accurate technic for suturing the uterine incision; the fifth beginning with 1907, when Frank devised the extraperitoneal technic.

During the first period the operation was done after the death of the mother for the purpose of saving the child, it is improbable that it was done upon the living subject, although some authors believe it was done by uncivilized races at a much earlier date.

The second period begins when the Swiss, Swinegelder operated successfully upon his own wife. This was most probably an ectopic pregnancy and not a cesarean section for history shows that this woman had five spontaneous deliveries following the operation. The first authentic cesarean section performed was in 1610 by Troutnan. As he and his followers used no sutures in the uterus, practically all patients died, either from hemorrhage or infection. Lebas in 1769 was the first to employ sutures but they did not come into general use until after Sanger's contribution in 1882.

In the late seventies the mortality in America was more than 50 per cent and in some of the

European medical centers the record failed to reveal a single successful operation for the ninety years prior to the advent of the Porro section in 1876. When Porro's technic was later improved by other operators and the cervical stump was covered with peritoneum, it became a very practical operation and was the first great step in reducing the maternal mortality and to the present day it is still the operation of choice when a definite infection is known to exist.

To Sanger belongs the credit for the greatest advance in cesarean sections, for he gave a definite technic for suturing the uterus, and from that date, 1882, there has been a very marked advance and a definite reduction in the mortality tables.

1907 marked the last great period when Frank devised the extraperitoneal operation through the lower uterine segment but due to the faulty technic, drainage had to be maintained with great difficulty. Latzo and many German operators tried with a few modifications to popularize this operation but it remained for Kronig to point the way by demonstrating that it was not necessary to do the operations via the extraperitoneal route, for the chief virtue was to open the lower uterine segment and then cover the wound with visceral peritoneum. Beck and De Lee did most to popularize this operation in America. Today it is the operation of choice by most obstetricians but the general surgeon with but few exceptions continue to do the classical section, in spite of the fact that it is not safe in the presence of infection and should not be done if infection is suspected.

In 1924 Portes described a new type of cesarean section which he claims is particularly adapted to infected cases in which it is important to preserve the uterus; as his method is a two stage operation with a five to six week interval between operations, it has never become popular, however in rare instances it can be of definite value.

The indications for cesarean sections are too many to be enumerated and will vary with the skill or lack of skill of the various operators, for what might be a definite indication for the general surgeon would not be an indication if the same case was in the hands of a skilled obstetrician.



In reviewing my own cases I find that I have erred more often in being too conservative rather than too radical but even so I plead guilty to both charges and without further comments shall let the record speak for itself for I have recently reviewed all of the cesarean sections done in the two general hospitals in Greenville in the past eight years. Of the 146 cases, 131 of which were white and 15 negroes, with an average age of 26 years, the oldest being 45 and the youngest 15 years, 55 were para one, 33 were para two, 11 were para three, 12 were para four, 19 were divided between paras five, six, eight, nine and ten, and the records on five failed to state the parity.

The average post operative days in the hospital were 13.4 days 102 of these patients were not in labor, 41 were in labor and no record in three. The B.O.W. was intact in 126 or 86 per cent of these cases, fourteen were ruptured before operation and six were not recorded.

Only twenty-nine or 20 per cent had vaginal examinations, two of this number had had bag inductions.

The indications for sections were as follows; twenty-five or 17 per cent had contracted pelvis, fifty-eight or 41 per cent had toxemia of pregnancy, most of whom had failed to respond to a more conservative treatment, while in many instances the section was chosen for the purpose of sterilization after repeated pregnancies with eclampsia.

Twenty or 14 per cent had placenta previa and I regret to state that many records failed to show the type of placenta previa that existed.

Three had decompensating hearts.

Fifteen had former classical cesarean sections only ten of which had indicated this as a reason for cesarean section.

Four had excessive scar tissue in cervix and vaginal tract.

Two had pulmonary T. B.

One each were sectioned for the following indications; ODP with head not engaged after test of labor, prolonged labor, cardiorenal with marked edema of the vulva, double cervix and septum in vagina and preeclamptic, stenosis of the cervix following amputation and one excessive pain no reason.

Sixty-eight or 47 per cent were classical sections and seventy-eight or 53 per cent were low

sections. Twelve different operators performed the 146 sections. Sixty-three or 42.8 per cent were done by one operator, nineteen by one, eighteen by one, twelve each by two, ten by one and the remaining thirteen cases by six operators.

The anesthesia used was as follows; ether 76, local infiltration of novocain 58, gas 5, spinal 4 and the type of anesthesia in two cases was not recorded.

Forty-three patients had morphine within two hours of the birth of the baby.

The 146 mothers gave birth to 151 babies, there being five sets of twins.

There were nine still births and seventeen babies that lived from a few hours to eight days making a gross loss of twenty-six babies or 16.5 per cent. After deducting the 5.9 per cent still births a 10.6 per cent foetal mortality is still a very high rate were it not for the fact that a large percentage of these babies were from toxic mothers and eight of whom were premature but so called corrected mortality tables can be made to look very much as the author chooses so I will not attempt to give a corrected percentage for they are rarely accurate and never convincing.

Only seven cases showed evidence of post operative shock and most of these had placenta previa and great blood loss before admission to hospital.

The morbidity was determined by classifying all cases that had an elevation of temperature of 100.4 or above after the first twenty-four hours as morbid cases.

Eighty-nine or 60.9 per cent were morbid cases for an average of five days, fifty-seven or 39.1 per cent had no morbidity, giving an average of three days for the entire series.

The maternal deaths were six or a mortality rate of 4.1 per cent. Four were white and two colored, giving a mortality rate of 13.3 per cent for colored patients and 3.05 per cent for white patients.

To review briefly the maternal deaths I find four white and two colored patients. The indications for section were eclampsia with contracted pelvis in one. Eclampsia that failed to respond to conservative treatment one. Acute fulminating nephritic toxemia one. Decompensating heart one. Placenta previa one and

one with prolonged labor with no engagement of presenting part. This latter case was probably a case with contracted pelvis or some faulty presentation, but as there was no prenatal record or any evidence that any pelvic measurements had been made the real indication can be only presumptive.

Three of the fatal cases had ether as an anesthetic and three had local infiltration of 1-2 per cent novocain.

Three had classical sections and three had low sections.

The causes of death were infection in four cases and acute urinary suppression in two.

54.1 per cent of all patients had low sections and 45.9 per cent had classical sections giving a mortality of 4.4 per cent for classical sections and 3.8 per cent for low sections. 100 per cent of the deaths from classical sections were due to infection while only one or 33.3 per cent of the low sections died from infection.

The maternal deaths show too many infections and bad surgical judgment in at least one case which had been in labor for forty hours, membranes ruptured for fifteen hours, five vaginal examinations, three of which were made after rupture of membranes. This was a classical section and the patient died from infection; another patient with nephritic toxemia was given general ether anesthesia.

In conclusion I would like to say that we are not satisfied with our mortality rate for it should be lower; but it compares favorably with that of other general hospitals on foetal mortality and better than most general hospitals for maternal mortality, in fact it compares favorably with many of the better maternity hospitals.

#### DISCUSSION

Dr. J. D. Guess, Greenville:

Let me remind you that I am on the staffs of the hospitals from which these statistics arose, and that I am one of the twelve operators referred to in this discussion. Condemnation will, in a sense, be self-condemnation. I have advocated a hospital requirement of consultation before contemplated cesarean section, just as is required in case of contemplated therapeutic abortion. Had such a rule been in effect in our hospitals, I am convinced that our mortality and morbidity would have been lower. I believe that no two men now permitted to use our operating

rooms for major surgery would have agreed to deliver by section a woman already forty hours in labor, with membranes already ruptured fifteen hours, and who had been subjected to many vaginal examinations; and if, because of a living, viable baby and obstructed labor, section should have been agreed upon, I am sure that the section would have been followed by hysterectomy.

One-fifth of the cases in our series had had vaginal examinations, and two had been subjected to efforts at bag induction of labor. The latter certainly, if not the former, it appears to me, should have interdicted section except by the Porro operation.

Statistics that are rapidly accumulating from clinics in various countries appear to surely indicate that the low or transcervical section, as compared with the transfundal, high, or classical operation, is relatively more safe in respect to both immediate morbidity and uterine ruptures in subsequent pregnancies. It is encouraging to note that in our series slightly more than one-half were transcervical.

Indications for cesarean section appear to be becoming more and more individualistic. They frequently appear to depend upon relative obstetrical ability as compared with surgical skill. The facilities for safe surgery surely play an important part. I fear that in many instances they depend upon the relative increase in the collectible fee in the case of section as compared with delivery from below.

During the period covered by this study craniotomy has been done in Greenville, I believe, only three times. When the fetus is dead, relative cephalopelvic disproportion is rarely an indication for section, but rather calls for craniotomy. Nine stillbirths in the series suggest the possibility that craniotomy might have been substituted for section, with consequent benefit to the mother.

I am sorry that the doctor omitted to make any reference to the incidence of delivery by section as compared with total deliveries. I think that this would not have been high, when taken in consideration with the fact that these hospitals are emergency hospitals for a large group of people most of whom have their normal deliveries at home.

I am particularly interested in the statement that 41 per cent of these sections were done for toxemia of pregnancy. If these sections were done in the course of eclampsia, it is my belief that they constituted poor therapy. If, after control of the eclampsia, they were done for other indications warranting section, that is another and highly improbable matter.

I believe that best results come from treatment of eclampsia along conservative lines until controlled, followed by delivery by that method easiest and least dangerous to the mother. In this connection it should be remembered that labor is usually quite easy in these toxemias, while, on the other hand, they are peculiarly susceptible to infection. Fetal mortality in these cases is so high, even when section is done, that that mode of delivery purely is



the interest of the baby does not appear to be warranted. Our gross fetal mortality in this series would appear to substantiate this statement.

The doctor has spent much time in making this interesting study, and I wish personally to thank him for presenting his findings for our information.

Dr. R. L. McCrady, Charleston:

I am connected with the city hospital here, and of course we have occasion to see a number of cases which may need cesarean. I was impressed by the figures the doctor has given. It seems that they do a good many more cesareans than we do. I looked over our records recently; and from the records of the Roper Hospital and the private department of the hospital (Riverside Infirmary) seventy-six cesareans have been done in the last ten years. I think that leans toward conservatism.

About cesarean in toxemias of pregnancy, I believe it has been concluded that that is not the best way. The doctor cited cases in which they had done cesarean in which conservative treatment had been already tried and had failed. Unfortunately, those are the very cases in which it is most risky. If you want to do a cesarean in toxemia of pregnancy, it should be done before other measures have been tried. The nearer you are to convulsions the more dangerous the cesarean.

Referring to consultations, it seems to me if we are going to have a consultation (which, rightly, we should) it should be with an obstetrician; the man who is going to do the cesarean should consult with an obstetrician whether it is the wise thing to do the cesarean or not. I think consultation with men who are not devoting their time to obstetrics, would not, naturally, be as worth while as with one who has made himself familiar with the indications for cesareans.

I feel about cesareans as Dr. McCord did about the treatment of eclampsia, about saving the babies. You who were here yesterday heard him say that when the time comes to treat a woman in convulsions, or on the verge of convulsions, in eclampsia, the time has come not to consider trying to save the baby. Frequently, when we try and save the baby we allow the life of a mother to be lost. I feel the same way sometimes when the time comes to do a cesarean, in a woman who is going to live a long time. We know the possibilities of infection are very great; we can hear the fetal heart, and we say: "Well, I believe I can save the baby; I will try a cesarean." I believe, when the time comes that there is a possibility of losing the mother, we should not consider the baby. In many cases when we resort to cesarean we will lose both mother and baby. It is very difficult to resuscitate the baby. The longer the woman has been under a general anesthetic, the more difficult it is to resuscitate the baby; so, though you endeavor to save the baby in this way, it is not always possible to do so.

As to natural delivery after having a cesarean, a

woman is somewhat in jeopardy from the time she has the first cesarean, if she is going to go ahead and have more children. I do not know how you feel about it, but I always have the feeling, when that woman comes back, that she is liable to have trouble. Of course, if the woman has no febrile temperature after delivery, the chances are that the scar is all right, though you cannot see it. If the patient has an elevated temperature after delivery, and has a stormy course, the chances are that the scar is not all right. So, as I say, you do not feel safe for the future; you have put her in the position where she is an unnecessary risk maybe for the rest of her life. That is my personal feeling about that matter. I am not attempting to criticize the doctor about his series of cases, because, as he said, it is something about which each one at present has his opinion.

Just one more word. That is in regard to the low cervical cesarean. I think he is correct about that, and that helps to explain his cumulative showing. Undoubtedly the low cesarean is the safest.

Dr. C. N. Wyatt, Greenville:

It has been my pleasure and privilege to have assisted Dr. Hearin in practically all the sections he has done, and practically all of them have been low cesarean sections. I have had the pleasure (though I do not know whether you could call it a pleasure or not) of delivering one of these patients in her home, after having a section, and there is a doubt in my mind as to whether it is safe or not. This case was a second pregnancy. She had had a section with the first baby, and eclampsia at that time. She had a very uneventful confinement with the second baby; I delivered her in the home with no trouble at all. She got along perfectly well.

In regard to doing sections in eclampsia, I think I can state that the sections were done after conservative treatment was tried in all these cases first. It was only when they did not respond to the conservative treatment that section was done. In practically all these cases local anesthesia was used, using one-half per cent novocain. Of course, it takes longer to give the anesthesia, but the cooperation was very good in practically all. The results were perfectly splendid. I do not recall a single stillbirth that we delivered in any of these cases.

There is no doubt in my mind, with what experience I have had in assisting Dr. Hearin and other operators there on service in two hospitals, that the low cesarean is perfectly safe and that the morbidity is considerably lower than in the classical section. There is no exposure of gut whatsoever, and no spill into the abdominal cavity.

These cases have been very interesting to me, and the paper is extremely interesting. I do think it is very convincing in stating these facts, and I think goes a long way towards settling the question, or, rather, the argument, that has always arisen as to whether we should do the classical section or the

low one. It seems to me the low section, beyond the shadow of a doubt, is the one to do, and I believe it is coming more and more into popularity.

I agree with Dr. Guess that there should be more consultation, particularly among the general surgeons. I do think, as his review shows, if some of these surgeons had had the proper consultation before these cases were undertaken, our mortality would have been better, and certainly our fetal mortality would not have been as high.

Dr. Hearin, closing the discussion:

I appreciate very much the discussion that these gentlemen have given the paper, and I want to concur in Dr. Guess' suggestion that if we had more consultations perhaps we would have fewer sections. As stated in the paper, it was an unusual number of toxic cases that were sectioned. On the other hand, when we compare our mortality with those treated conservatively, our mortality rate would be equally as high, or higher. I know in my own work the

mortality has been as high when treated by conservative methods as when these cases were sectioned, because none of them were sectioned, with few exceptions, until after all the conservative methods had been exhausted.

I want to differ with the gentleman on the point of disregarding fetal mortality. I do not think we want to have dead babies. I believe numbers were saved by cesarean that would not have lived otherwise.

As to deliveries after cesarean, I have never found one in which the scar tissue through the lower uterine segment was weakened, in fact, there was no evidence of scar tissue. The tissue seemed to be as firm as the rest.

I think we should always attempt to try conservative methods with our toxic cases, and until further evidence convinces me I am going to continue not to disregard fetal mortality where I think it is safe for the mother.

## PATHOLOGICAL CONFERENCE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 283, MARCH 1, 1935

*Service of Dr. LaRoche*

Student Mims (reading):

Negro female, age 20, unemployed domestic, admitted 12-3-34, died 12-16-34. Patient seen intermittently in O.P.D. for several months. On 10-4-34 she was complaining of nervousness, backache and sore mouth. Sclerae yellowish at this time, numerous ulcers in mouth. Blood Wassermann and Kline 4 plus. Given 6 injections of neoarsphenamine between 10-12 and 11-16, totalling 3.3 gms. On admission to hospital complained of pain over heart, dimness of vision. The dimness of vision began soon after treatment was begun, and about one month before admission pain began over precordium. On the day before admission she became unable to walk (?).

Examination: Fairly well developed female, temp. 98.6, pulse 90, resp. 20, B.P. 114-66. Sclerae yellow, pupils equal and react to light. Mouth and pharynx negative except for jaundice. No lymph glands palpated. Lungs clear. Heart: Not enlarged. Rate slow and "some-

what irregular." No murmurs, no thickening of arteries. Tender in right upper abdominal quadrant, no masses felt. Marked weakness in extremities. Patellar, biceps and triceps jerks 3 plus. Sustained ankle clonus bilaterally. Bilateral Babinski. No apparent cranial nerve weakness.

Progress: Temperature, pulse and respirations normal until 12-15 when temp. rose to 100.2, falling to normal and remaining so until death. Pulse 140 for last day, respirations 40-48. Patient became very listless and sluggish in response to questions. 12-14 she became semi-comatose, with eyes open, and jaw moving in chewing motions. Some spasticity of all extremities. Reflexes same as before. Pupils react to light. On 12-15, respirations became rapid and labored, all reflexes absent, patient appeared moribund. Some stiffness of neck, suggestive Kernig. Comatose. No findings on anterior examination of chest. Died 1:10 A. M. 12-16-34.

Eye Consultation (12-5-34, Dr. Townsend): Questionable edema of right optic disc, temporal pallor of left disc. Blood vessels normal.



One line across right macula lutea, several across left.

Laboratory: Urine (12-5) voided, Sp.Gr. 1.009, no albumin, sugar or acetone. Bile positive. Rare pus cell, no blood. On 12-13 bile in urine 4 plus, urobilin negative, urobilinogen normal. Blood (12-5-34): Hb. 70%D, W. B.C. 8000, polys 50 per cent, lymphs 40 per cent, monos 6 per cent, eosinophiles 3 per cent, basophiles 1 per cent. Blood Chemistries (12-6; 12-15; 12-16) Urea N 11, 13, 14. NPN -, 27, -. Sugar 94, 15, 83. Van den bergh (12-6): direct 3 plus, delayed direct 4 plus, quantitative indirect 7.5 mgs. Icterus index 95. 12-13 direct 3 plus, quantitative indirect 4.2 mgs; Rose-Bengal Liver Function test 67 per cent. Icterus index 65. Blood Kolmer negative. On 12-15 total serum protein 7.23 gms., serum albumin 2.52 gms., serum globulin 4 gms. Spinal fluid (12-8-34): slightly yellow, total cells 344, lymphs 93 per cent; polys 7 per cent; globulin 1 plus, sugar "very slight trace." Colloidal gold 4454321000.

Dr. Cannon (conducting): Mr. Matthews, will you discuss this case?

Student Matthews: We have here a known syphilitic patient, although her blood Kolmer is negative on admission, who has jaundice and backache before arsenical treatment is begun. Syphilis may cause many changes in the liver: an acute hepatitis, gumma, fibrous scarring, or a perihepatitis. In addition to this we have the factor of the administration of arsenic. On admission she showed dimness of vision, jaundice, slow and somewhat irregular heart action, and evidence of a generalized toxemia. The positive laboratory findings of an immediately positive van den Bergh, with an increase in the strength of the reaction on later reading, a lowered response to the Rose-Bengal test of liver function, and a high icterus index, all point to severe liver damage. I believe that her liver condition is an acute yellow atrophy on the basis of arsenical poisoning, or possibly a subacute stage of acute yellow atrophy. The neurological findings are suggestive of something in addition to the liver condition, although the toxemia of failing liver function can cause many of these cerebral symptoms, as the weakness, lethargic state, and actual coma. But sustained ankle clonus bilaterally, bilateral Babinski, and

exaggerated knee jerks, with the later development of a stiff neck and a positive Kernig's sign, suggest organic disease of the nervous system. The pleocytosis in the spinal fluid, with predominance of lymphoid cells, and a colloidal gold curve of this nature, strongly suggest syphilis of the central nervous system, although the development of the symptoms is rather acute. So I will add syphilitic meningitis to my diagnosis of acute or subacute yellow atrophy of the liver.

Dr. Cannon: Mr. Fouché, can you add anything to the discussion?

Student Fouché: I think that Mr. Matthews has brought out most of the features of the case. I am inclined to believe that there was an active syphilitic hepatitis before the administration of arsenic, and that this drug caused enough further liver damage to give complete failure of liver function. For the cerebral status, I believe that she has had a meningo-vascular syphilis for some time, with a rather acute flare-up terminally, an active syphilitic meningitis.

Dr. Cannon: It seems to me that this case calls for some discussion from the visiting staff. Will anyone volunteer?

Dr. Chamberlain: As has been pointed out, there is doubtless marked impairment of liver function. A point of interest is the question as to the relation of the nervous system symptoms to arsenical therapy; if we knew whether these symptoms were present before treatment was begun, we would have a definite basis for comment. I am not acquainted with the changes that occur in the brain in association with acute yellow atrophy of the liver, but I imagine that they would be necrobiotic cellular changes. But I do not believe that the drug alone could produce the definite pyramidal tract signs, and more especially the pleocytosis in the spinal fluid. I believe that she had syphilis of the nervous system. The prominence of the pyramidal tract changes, without pupillary changes or apparent involvement of the cranial nerves, suggests that the greater involvement is in the spinal cord. The quick appearance of these symptoms and signs, while under intensive treatment, is interesting, and brings up the speculative question of a flare-up of a latent syphilis of the nervous system induced by arsenicals. The findings suggest chiefly a meningomyelitis of some dura-

tion. The colloidal gold curve, bordering as it does between a paretic and a tabetic curve, bears out this impression.

Dr. Johnson: In an interpretation of liver function, it must be remembered that the usual activities of the liver can be carried on with only about 15 per cent of the total liver tissue functioning. The regeneration of liver tissue, with increased activity of viable cells, is also important. The blood chemistries in this case are very interesting in the light of known liver damage. The low blood sugar, 15 mgs at one time, is very significant, as carbohydrate metabolism is severely affected as the liver fails. The nitrogenous elements are higher than would usually be expected in such cases, as the liver plays a very large part in the formation of these end products from the amino acids. The bile pigment is usually increased in the urine and blood in jaundice. That there is no increase in the urobilin or the urobilinogen in this case suggests that there is little if any obstructive factor. The van den Bergh reaction is biphasic, showing both damage to liver cells, and probably some obstruction to the finer biliary radicles. The Rose-Bengal test, somewhat similar to the older bromsulphthalein test, shows a function 67 per cent of the normal. This is not as marked a change as would be expected here. In an estimation of the hemoglobin, it must be remembered that the presence of the bile pigment in the serum will alter the reading; so a red cell count should be done to determine the presence of an anemia.

Dr. Robert Wilson, Jr.: It seems that the question should be raised as to why arsenic was given in the presence of jaundice. I note now that jaundice is recorded at one time on the clinic record, but when she presented herself to the Department of Syphilology, jaundice was not noted. As regards the neurological findings, these were definitely absent when she presented herself at the clinic. Were it not for the pleocytosis of the spinal fluid, I would explain all the cerebral manifestations on a basis of acute yellow atrophy of the liver, even the pyramidal tract signs. However, this cell count in the spinal fluid, with the other changes as noted, makes the diagnosis of syphilis of the nervous system almost incontrovertible. The last recorded blood sugar, 83 mgs., was taken

only a short while after giving glucose intravenously, so it can be concluded that a hypoglycemia was still present.

Student King: How do you explain the negative Kolmer on admission?

Dr. Wilson, Jr.: On the basis of intensive treatment.

Dr. Lynch: I have listened with interest to the analysis of this case, especially as regards the manner in which syphilis predisposes to arsenical poisoning. There was no evidence of such being the case here. I am familiar with the syphilitic hepatitis of congenital syphilis, and the gummas of the liver of tertiary syphilis, but an actual diffuse hepatitis of syphilitic origin is quite rare, and I have never seen it at the autopsy table. When acute yellow atrophy of the liver occurs in syphilis without treatment, this does not necessarily mean that syphilis was the cause, as we frequently see acute yellow atrophy of the liver in non-syphilitics without being able to find a cause, and their occurrence together may be merely a coincidence.

This woman had the condition commonly called "acute yellow atrophy of the liver," but a better term for the condition is "acute necrosis of the liver," since, while the liver is smaller than normal, the change is not an atrophy, but a necrosis of the liver cells, and the resulting collapse of the supportive tissue accounts for the diminution in size. If the individual lives long enough, a hyperplasia of the viable liver cells occurs, which, in distinction to the necrotic and collapsed areas, causes that part to be unduly prominent. In this liver (demonstrating autopsy specimen), the red shrivelled portion is the necrotic part; you see it is not yellow at all, but red, again showing that the name is a misnomer, as the color is due to the presence or absence of blood in the collapsed sinuses and supportive framework. This other portion of the liver stands up from the surrounding collapsed portions. It is the normal and hyperplastic functioning tissue, comprising in this case about one-fifth of the total. The yellowish discoloration is due to the large content of bile. This is the appearance of the liver occasionally described as "subacute yellow atrophy." There is no evidence of syphilis to be found in this liver, and we assume that the arsenic which we know the patient received is



the etiological factor, although some medication or factor could have caused such a state.

The kidneys show marked damage to the "secretory" portion of the tubules, the change in these being of a degenerative type.

The immediate factor to cause death here was a massive lobar pneumonia, involving the entire right lung. The small amount of functioning liver tissue which she had was sufficient to permit her to live to get a lobar pneumonia, which tipped the balance.

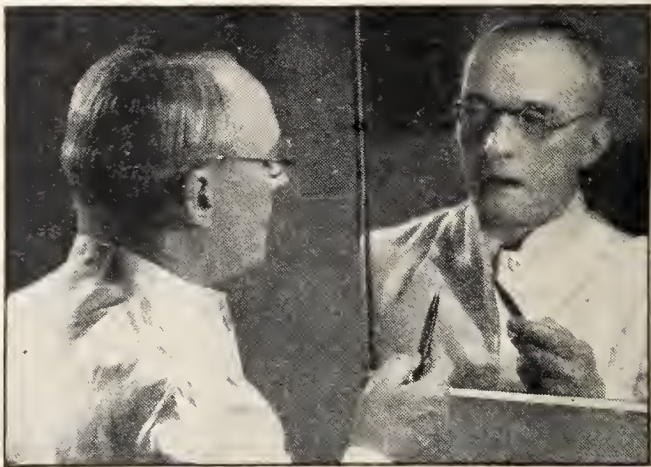
As has been well analysed, she had an active meningo-encephalitis, of syphilitic origin. The cord was not removed and so we cannot speak of that except to say that the same active process that was in the brain was probably in the cord. Whether these syphilitic processes had been stirred up by arsenical therapy cannot be said from our studies.

Dr. Smith: In some cases of secondary syphilis, we see jaundice and enlargement of the liver. What is the nature of this process?

Dr. Lynch: These seldom come to autopsy, and so sufficient cases are not on record to definitely establish the nature of such processes. Of course, jaundice does not necessarily mean liver disease, but when associated with enlargement of the liver, some change is doubtless present.

(Demonstrating microscopic changes by projection) The microscopic appearance of this liver shows large areas of complete necrosis, and a collapse of the supporting tissue. There is considerable blood contained, as you can see here, and that is doubtless the cause of the red color of the gross specimen. Here we see active bile duct proliferation, representing the usual replacement of highly specialized tissues by a lower order of tissue present in the same organ. There is also active proliferation and hyperplasia of the functioning liver tissue, and the cells are large, their nuclei large and unusually active, with occasional mitotic figures to further indicate increased activity.

## Please give yourself this good advice, Doctor



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## EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

### REINFECTION OF THE WOUND FOLLOWING MASTOIDECTOMY

*Dr. A. A. Schwartz, N. Y. Arch. Otol.,  
Jan. 1935, p. 71*

The desired end-results of a simple mastoidectomy are complete healing of the wound and a dry middle ear. A failure to heal may be due to (1) an incomplete operation; (2) extension or complication of the disease; (3) some constitutional dyscrasia; (4) type of mastoiditis, scarlet fever, in which elements of chronicity are present from the onset, and in which middle ear may never become dry.

The duration of the healing also varies, from ten days to several months. The regrowth of new tissue is sometimes very slow. The process of healing is (1) granulations which are converted into (2) connective tissue, and this is infiltrated with (3) new bone from the periosteum. The amount of new bone formed varies greatly from scarcely any at all, to a completely reproduced cellular mastoid (an instance of which I saw in a patient upon whom I performed a mastoidectomy on the right ear at 3 years of age; the left ear was operated upon at 17 years of age. The right mastoid showed then by X-ray a complete development, looking as if it had never been operated upon). Dr. Schwartz is discussing reinfections that occur after a considerable period and not such as occur before the wound heals. He says that "reinfection of the wound occurs frequently." Its causes are (1) acute otitis; (2) any infection which causes an acute otitis; (3) swelling of the connective tissue in the postoperative cavity blocking drainage and causing retention and reinfection.

The amount of pain, tenderness and swelling depends upon: 1. blockage of drainage, through the aditus, (there was one case in which I used to be able to abort a reinfection by putting adrenalin solution in the ear and by pressure over the mastoid area evacuating the pus); 2. the amount and character of new bone which

has been formed; 3, the type of the infection.

In these recurrences the point arises whether a complete mastoidectomy should be performed, especially if the X-ray shows cells whether newly formed or left at the previous operation. There are frequently much symptoms of illness until the pus finds its way subcutaneously and one may find much pus under pressure and diseased granulation in the cavity about the antrum, but they are to be expected and are not of themselves a reason for a new complete operation.

And unless there are signs or symptoms of complications there is no indication for immediate operation, but it is best to allow the pus to localize and point to some extent. (It seems to me that unless you know that neither the dura nor the sinus are exposed by the previous operation you would be taking a risk to wait for several days for localization to occur. This is of course a matter for careful observation.)

It seems, therefore, that those cases of secondary infection in which complete mastoidectomy is needed are extremely rare, even if several reinfections occur. A complete mastoidectomy is indicated only when the original mastoidectomy has been incompletely and inexpertly done.

In one case, age 11 years, he reports there were two recurrences after the dura was exposed on the right side by a previous operation. In the second recurrence there was much pain and unlocalized headache on the side of the exposed dura. The swelling was opened and pus evacuated from a large cavity. But the temperature continued 99-102 with restlessness, headache, chilly sensation and pain in neck. A diagnosis of meningitis sympathetica was made. Lumbar puncture showed a slightly cloudy fluid, reduction of copper, 970 cells per cm., of which 88 per cent were polys. Smear negative for organisms. Culture was contaminated.

Six days later, Feb. 10, there was a right facial palsy peripherally diminished knee jerks, bilateral ankle clonus and rigid neck. Repeated lumbar punctures advised to relieve menin-



geal symptoms. From Feb. 10-17 temperature and clinical course continued same except that the rigidity of neck became less and facial paralysis cleared up. The cells in the spinal fluid varied, being on Feb. 17, 1600 when the temperature also rose to 105 and dropped to normal and stayed normal. At the same time a few colonies of *Streptococcus pyogenes-haemolyticus* were found.

The Ridge Medical Society met in Dr. Timmerman's office at seven o'clock Monday evening the eighteenth of February.

We usually have some clinical cases exhibited but didn't this time.

Dr. Wm. B. Timmerman of Johnston read an interesting and instructive paper on nephritis with reports on two cases recently treated by him which was discussed by Drs. T. A. Pitts, D. F. Adcock and O. P. Wise.

Dr. O. B. Mayer read an instructive paper on Undulant Fever and in it spoke of the negroes being so much less liable to contract it than whites. The ratio being about one to twenty.

He also spoke of the people becoming infected from cows and cows from hogs but that people didn't become infected from hogs.

His paper elicited discussion by Drs. Brogden, Asbill, Wise, Ballenger, Pitts and King.

The following were elected delegates to the meeting of the State Medical Association in Florence:

Dr. Wm. B. Timmerman of Johnston for Edgefield County.

Dr. O. P. Wise of Saluda for Saluda County.

Dr. W. W. King of Batesburg for Lexington County.

The delegates were authorized to select their alternates.

Drs. E. P. Taylor of Batesburg and D. B. Frontis of Ridge Spring were appointed to enlist the interest of the dentists of our section in our meetings.

Dr. T. A. Pitts exhibited a number of pictures of cancer in its various stages.

Dr. Byrd reported a case of cancer of the face.

Four transfusions were given between Feb. 10 and 17 but did not seem to influence the course of the disease.

The sinus and dura which had been exposed widely six years before was covered by a solid layer of bone. (It seems that reinfections sometimes occur in the best regulated families. I saw one this winter in a case operated by an efficient specialist last summer).

Dr. King reported two cases of cancer of the breast.

Dr. W. P. Timmerman reported one case of cancer of the breast.

Drs. Wise, Asbill and Timmerman discussed the examinations or failures of examinations for cancer.

Supper was served in The Rutland Hotel where short impromptu talks were made by Drs. Asbill, Byrd, Pitts, Mayer and Wise.

The Ladies Auxiliary was entertained by Mrs. W. P. Timmerman.

Dr. W. P. Timmerman attended the meeting of The Tri State Medical Association in Charlotte.

Dr. and Mrs. W. T. Gibson and family of Roper, N. C. and who formerly lived here were here this week to attend the burial of Mrs. Gibson's father, Mr. Henry T. Wright.

W. P. Timmerman, M.D., Secretary.

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## SOUTH CAROLINIANA

J. I. WARING, M.D., CHARLESTON, S. C.

*Toxicity of Naturally Occurring Arsenic in Foods*—Coulson, E. J., Lynch, K. M., and Remington, R. E., Charleston. Science 80, Sept. 7, 1934.

Arsenic occurs in many articles of diet, especially sea foods. The authors could show no evidence of toxic effect on rats fed on foods high in arsenic content.

*The Newer Management of the Diphtheria Carrier*—J. S. Barksdale, N. E. Turner and R. L. Bates, Greenville. Sou. M. J. 28, April 1935, 378.

Commenting on the difficulty of clearing up the diphtheria carrier, the authors state that they find bismuth-violet solution most efficacious in ridding the throat of the bacilli.

*The Practical Side of Public Health*—Leon Banov, Charleston. Sou. M. J. 28, 65, Jan. 1935.

The Chairman's address to the Section on Public Health of the Southern Medical Association. The author stresses the necessity for full time workers, the limitation of the work of a health department to prophylactic measures, freedom from political interference, publicity measures, friendly relations with medical societies, and efficient systems of records.

*The Tuberculin Patch Test*—J. I. Waring, Charleston. J. of Ped. 6, Feb. 1935, 202.

The test, performed by applying undiluted Old Tuberculin to the unbroken skin, seems to run in close agreement with strongly positive intradermal tests, but according to the figures given here is not comparable with the milder intradermal reactions. A series of 155 tests is reported in detail.

*Stephen Elliott*—J. H. Hoch, Charleston. Ann. Med. Hist. N. S. 7, Mar. 1935, 164.

An interesting account of the life of this South Carolinian who was distinguished in

many fields outside of his favorite botanical activities.

*Medicine in Charleston 1750-1775*—J. I. Waring, Charleston. Ann. Med. Hist. N. S. 7, Jan. 1935, 19.

A rambling sketch of some of the phases of medicine just before the Revolution, with some account of the more prominent medical figures of the time in Charleston.

*Cooling System for Developing Solution*—P. D. Hay, Florence. Am. J. Roentg. 33, Feb. 1935, 252.

Detailed description of an apparatus designed by the author for cooling Developing Solution for X-Ray films.

*Special Milk in the Solution of the Iodine Deficiency Problem*—William Weston. Arch. Ped. 51:683, Nov. 1934.

As a result of many investigations the author believes that iodine deficiency, especially in children, is more prevalent than the presence of goiter would suggest. From other studies it has been shown that the iodine content of foods and water varies widely in different sections of the country and at different seasons of the year. As milk is the most universal food, especially for children, and since it is a particularly good source of iodine, efforts have been made to produce a high iodine dried milk, which has been given to children with excellent results. Better growth, and general health, absence of iodine deficiency, and improved calcium-phosphorus balance have all been observed in infants and children receiving this iodine rich milk, a powdered milk (Dryco) produced in South Carolina. The author points out that the administration of inorganic iodine has not been successful, since the body is able to store only organic iodine in the tissues as a reserve supply.





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# THE JOURNAL

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### Cardiovascular Renal Disease in the Negro

By

JACK C. NORRIS, M.D.

Atlanta, Ga.

This study is comprised of 539 necropsies, in which 129 or 23 per cent of the examined hearts were diseased. Arteriosclerosis or syphilis was the offending factor in most of the cases, and of the entire series there were only two streptococcal and two rheumatic hearts.

#### AGE INCIDENCE

Further analysis of the 129 necropsies revealed the average age of the patients to have been 45 years. The oldest patient was 80, and the youngest 22 years. Twenty-four were between the ages of 60 and 75; twenty-nine between 50 and 60; thirty-three were between the ages of 40 and 50; and thirty-eight were below the age of 40. In considering these figures from an analytical viewpoint, it is noted that the preponderant number of deaths occurring from heart disease, or its effects, is in relatively young people and indicates that as one exceeds the age of 65 it is probable that he may die from other causes.

#### SEX OCCURRENCE

There were in the group 34 females and 95 males. This indicates that locally heart disease in the negro is almost three times more prevalent in the male than in the female. In attempting to explain this, one may consider various factors more common in the male, as the use of alcohol and tobacco, improper diet, syphilis, arterio-sclerosis, rheumatic fever.

From the Department of Pathology, Emory University School of Medicine and Grady Hospital.

Read before the South Carolina Medical Association at Charleston May 3, 1934.

Submitted for Publication on April 3, 1935.

Probably more important are the effects of syphilis, arterio-sclerosis, and hard labor. Most of the patients had been laborers.

#### BRIEF HISTORY NOTES

A large number of the necropsy protocols had short histories. Forty-six patients complained of shortness of breath; forty, edema of the extremities and abdomen; and twenty-nine had chest pain. The pain was more frequently substernal; occasionally it was referred to the upper abdomen, then to the left shoulder and down the left arm; fifteen patients had the cardiac triad of "shortness of breath, pain and edema." Other complaints were nervousness, nausea and vomiting, failing vision and headaches. The headaches, when described as severe, usually were associated with, or forerunners of, uremia.

#### GENERAL PATHOLOGY

In considering the hearts individually it was observed that there was a constant uniform enlargement. The protocols repeatedly described the hypertrophied left ventricles, dilated auricles, with dilatation and thinning of the muscles also of the right heart. The hearts averaged 514 grams in weight. The largest heart weighed 1050 grams; forty-nine weighed 500 grams or more; and sixty-nine weighed less than 500 grams. Three hundred and fifty grams was considered the representative heart weight of the normal adult negro male. Grossly the hearts of the hypertensive group were often of a beefy-red color with a firm, resistant feel to the muscle, having also a thickened wall, sometimes measuring as much as 3 cms. in thickness on the left side. Such hearts probably represented strong resistant vessels. In the hearts from older patients the beefy-red color had often faded, and the muscle was softer. The apices were not infrequently



thin-walled, and the peripheral vessels were tortuous. The heart muscle in which fibrosis was extensive, showed scattered, irregular sized, whitish, glistening streaks. Hearts damaged by syphilis were somewhat softened, much less so than the fibrotic types; and there was frequently enlargement of the aorta, dilatation of the mitral cavity, and thinning of the muscular wall.

#### AORTAS

The aortas were interesting in that 50 of them were described as being atheromatous. Marked atheroma was also noted in 13 and slight in 10. This represents a total of 73 of 129, a percentage of 56. Sixteen aortas were grossly syphilitic. Seven had mixed lesions such as sclerosis and syphilis. Consideration of the figures impressed one with the commonness of atherosclerosis involving the larger arteries and emphasized the caution necessary when giving one's opinion concerning etiology. It seems logical that aortitis be considered the result of atheroma in the majority of the patients. It is to be remembered, however, that climate and age may play an important factor in etiology. Rheumatism may produce an aortitis, and frequently does so in patients living in colder climates. In the young negro, below the age of 40, the process is likely to be syphilitic should he live in an equatorial climate.

#### ANEURYSMS

Sixteen aneurysms were found in the review. Twelve of the sixteen were syphilitic, seven had ruptured, two had produced tracheal obstruction. Seven of the hearts were not enlarged, and nine were definitely larger than usual. There were only two aneurysms involving the sinuses of valsalva. This emphasizes the interesting, almost equal, possibility concerning the enlargement of the heart as related to aneurysm. It further suggests that syphilis is more likely to be the cause of aneurysm than is arteriosclerosis. In the entire series twelve had degenerative and ulcerative changes of the aortic valves; that makes one feel certain that aortic insufficiency or incompetency had been present during life.

#### CORONARY FINDINGS AND THROMBOSIS OF VENTRICLES

Ninety-three (93) of the patients had damaged coronary arteries due either to atherosclerosis or syphilis or both. In this group we believe that ten arteries were damaged by syphilis; nine were positively occluded by fibrotic obliteration, calcareous material, or blood clots. Many of the arteriosclerotic vessels were narrowed, tortuous, brittle, and often firm. Throughout the lumen of many vessels there were elevated and depressed areas, yellow in color. It was troublesome to differentiate between the syphilitic and the moderately sclerotic coronary. Narrowing of the coronary ostium, with ulceration, thinning of the arterial wall, and a bluish discoloration is believed to have been caused by syphilis and not by arteriosclerosis; however, the processes were occasionally mixed, and differentiation was difficult.

Ten of the hearts revealed the presence of intramural thromboses. The thrombotic lesions were most often in the ventricular parts of the left heart, usually near the apex of the lateral left wall, and in most instances the muscle of the described areas was thinner because of a prior extension and necrosis. The necrosis was followed by repair, and the adherent layers of the organized thrombotic tissue were of necessity reparative and protective. Occasionally it was observed that thrombosed material had broken away and had produced infarction. Sudden occlusion of the coronary in this group seemed very uncommon, especially when considered in terms of sudden death; however, one cannot help but feel that terminal fibrotic obliteration of the muscle arteries is a common, constant, progressive process. The small areas of necrosis are quickly replaced by fibrous tissue following a temporary inflammatory reaction leading to regeneration and repair. It is quite probable that these patients have vague pains referred to the epigastrium and to the chest wall that are temporary in character and usually disappear with symptomatic treatment and leave little damage. The process reoccurs over a period of years until a large portion of the heart muscle has become infiltrated with fibrous tissue and eventual failure occurs, producing death.

## KIDNEY PATHOLOGY

It was found that the average weight of the kidneys was 170 grams. Thirty-eight kidneys weighed less than 150 grams; eighteen weighed 100 grams. Six patients had very small kidneys; and whenever it was observed that the kidneys ranged in weight from 70 to 100 grams, the patients were uremic. The nephritic kidneys as a rule averaged 160 to 175 grams; and the histologic sections would show bizarre changes such as fibrosis of the vessels and the glomeruli, hyalinization, infiltrating cells, and cylinder formation. The kidneys in those groups with syphilis or aortic insufficiency averaged about 150 to 200 grams, though sometimes considerably exceeding that weight. In this connection it was felt that the enlargement was caused by continued passive congestion. Classification of the kidneys was practically impossible. The only logical grouping would be: (a) kidneys with chronic passive congestion and hypertrophy; (b) syphilitic kidneys; (c) fibrotic kidneys with moderate thinning of the cortex and with scarring and pitting; (d) the very small kidneys resulting from extreme arteriosclerosis.

SPECIAL PATHOLOGY OF THE AORTA IN  
SCLEROSIS

The vessel was usually enlarged; the valves stiff and resistant, at times calcific and hard, occasionally open, irregular, sharp and roughened. Beginning at the aortic base a yellowish-white deposition was observed which spread upward to the curvature and descended the vessel. The atheroma at times was infiltrative or degenerative and soft, so much so that the intima and media broke easily. If the calcific changes were marked, the aorta lumen was irregular, tortuous, hard and rough, and in some places "crackled" when pressed upon. The coronaries were usually similarly involved and were often tortuous.

## THE AORTA AND MUSCLE IN SYPHILIS

The valves were most often involved at the junctional commissures by a proliferative inflammatory process; and at the points of attachment there were thickening, elevation, swelling and edema. Ulceration had often occurred, and the valves were detached, producing insufficiency. The lesions in the upper aorta

were characterized by irregular-sized, elevated swellings with roughening and wrinkling of the intima, which seemed somewhat corrugated and in folds. There were also small pit-like areas of ulceration, contraction, and necrosis. These areas occasionally had a faint porcelain china discoloration. The process was usually described as having been limited to the base of the vessel and localized in a single spot; sometimes the process was diffuse and spread upward near the curvature, where it usually faded out. The coronaries were involved at the ostia, narrowing occurring; and the disease process often spread along the coronary lumen. In the muscle there were seen grayish-white, semi-translucent areas slightly depressed, with or without zones of hyperemia. Gummata were seldom found. Occasionally syphilitic infiltration had spread into the auriculoventricular septum.

## THE AORTA IN RHEUMATISM

Rheumatic involvement of the aorta was seldom seen. The lesions most often involved the valves. The edges of the leaflets were enlarged and thickened and seemed rolled and rounded. There was seldom ulceration. The process seemed one of extensive reparative fibrosis with an absence of calcification.

Any of the aortic lesions might have been mixed varieties, and not infrequently atherosclerosis and syphilis were observed together. One may find a similar condition concerning rheumatism and atheroma. Seldom do rheumatism and syphilis appear together.

## CAUSES OF DEATH

The cause of death, as determined, revealed that thirty-nine of the patients died from pulmonary congestion; fourteen with myocarditis, as suggested by thinning of the right heart wall, softening of the left heart, dilation of the cavities, and distension of the auricles; eleven died from brain hemorrhage (three of these were within the pontine region); and eight from aortic insufficiency; and eleven from pneumonia; eight patients died from ruptured aneurysms; two from aneurysmal pressure; six because of progressive edema and nephritis; and two from complicating diabetes. Other causes were cerebral syphilis, peritonitis, carcinoma, pleurisy, pellagra, pericarditis, lymphosarcoma, skull



fracture, tuberculosis, ruptured transverse aorta and immediate coronary occlusion, et cetera.

#### CONCLUSION

1. Twenty-three per cent of the deaths in this study of adult negroes were due to heart disease.

2. The average age of forty-five years indicates the importance of the problem, because these were deaths in comparatively young people.

3. The disease is predominant in the male. Hard labor, arteriosclerosis, and the high incidence of infectious diseases probably play a part in the etiology.

4. The diagnostic cardiac triad was substernal pain, shortness of breath and edema. Headache, severe and persistent, suggested severe kidney disease and indicated uremia.

5. Aortic involvement occurred in more than fifty per cent. Syphilis was a causative factor in a large number.

6. Aneurysm was found in more than ten per cent of the cases. The greater the incidence of syphilis, the more often the occurrence of aneurysm.

7. Coronary affection is practically always present in arteriosclerosis and frequently present in syphilis of the heart and aorta. Occlusions occur in ten per cent with resulting infarction and thrombosis of the ventricle in an equal number.

8. The kidneys seldom escape injury in heart disease. Three main types are simply classified: chronic congested, syphilitic, and moderate and extreme arteriosclerotic.

9. The cause of death in the majority of patients was largely due to congestive heart failure and pulmonary edema.

#### DISCUSSION

Dr. W. Atmar Smith, Charleston:

I just want to congratulate Dr. Norris for his very interesting paper. I believe if we continue such studies as this we shall get somewhere in finding the cause of the high morbidity and mortality in cardiovascular-renal disease.

There is not much to add to what Dr. Norris has said. I just want to ask him about the frequency of pulmonary arteriosclerosis. I notice that in this series he did not mention any of these cases. Then I should like to ask Dr. Norris what is the mechanism of "worry" in the causation of heart disease.

Dr. J. H. Cannon, Charleston:

I think that any analytical study of pathology is always worth while. Dr. Norris has evidently gone to a great deal of trouble to analyze this series of cases. As has been emphasized, whatever may be the cause of it, certainly our attention has been concentrated on at least an apparent increase in the percentage of deaths from heart disease.

It seems to me that there are two or three points that Dr. Norris mentioned that are worthy of emphasis. In the younger patients in the group the deaths were mostly explainable on the basis of rheumatic disease and syphilis; in the older cases the degenerative, or sclerotic type of disease explained the deaths. An effort to utilize that factor, then, it seems to me is one of the points that confront us in our daily work. He mentioned the large heart, and it has always seemed to me a worth-while thing to bear in mind that if we find in a patient an enlarged heart (and we should always look for it) then we know there is something wrong. A patient can not have an enlarged heart and have a normal heart. He may have a normal-sized heart and yet have heart disease, but if he has an enlarged heart he very definitely has an abnormal heart.

Another thing that it seems to me this study brings home is the large number of cases of fibrosis of the myocardium. I recall reading an article by an Englishman (I have forgotten the name for the moment) a few years ago in which he analyzed a large series of cases. The commonest pathology was hypertrophy and dilatation of the heart and, secondly, fibrosis of the myocardium. It seems to me if we bear in mind in our clinical work these few points, we can apply them to advantage in the practice of medicine.

Dr. Robert Wilson, Charleston:

The increasing incidence of cardiovascular diseases has attracted a great deal of attention in recent years, but I doubt if this increase is as important as is generally believed. We hear of more deaths from the degenerative diseases of middle life than formerly, chiefly because more people reach this period on account of the successful preventive measures which are applied to the diseases of early life. The problem of heart disease probably is no more serious than it always has been. The form of heart disease which constitutes the menace in middle life is merely a phase of disease of the cardiovascular system and the heart is involved secondarily. Consequently if we are to solve the problem of its causation, which obviously must be done before we can discuss rationally its prevention, we must shift the emphasis of our investigation from the heart to the arterial portion of the system.

The commonly assigned causes have little foundation to rest upon. The assumption of the importance of the conditions of our tense modern life loses force in the face of Sir Mark Armand Ruffer's studies of Egyptian mummies; and what can be said of the effect of mental strain when we recall the prevalence

of these diseases among the negroes? Perhaps the basis will be found to be some congenital defect of structure or function transmitted by heredity.

Such pathological studies as presented by Dr. Norris in this very interesting paper are important contributions to our knowledge, but do not clarify the obscure problem of etiology.

Dr. Norris, closing the discussion:

I appreciate very deeply the discussion of this paper. In hearing Dr. Cannon, Dr. Smith and Dr. Wilson talk about this subject I could, without any trouble, recall memories of my student days, and feel that my efforts and interest had been stimulated by my teachers.

Arteriosclerosis of the pulmonary artery has been such an uncommon finding that I have almost gotten to the point where I disregard the pulmonary artery. I may be making a mistake. Of a long number of autopsies which I have performed I have not seen any instance where the pulmonary artery was invaded by syphilis. We do sometimes find a certain amount of arteriosclerosis, but not as often and not as marked as that in the aorta.

As to the mechanism of worry in heart diseases I have not yet reached the stage where I am thinking in terms of etiology except in those specific instances where we find the spirochetes. I do not know the true mechanism, nor how worry seems to have its effect on the cardiovascular system. It is more or less something that has been handed down and spoken of so commonly by those men who have gone before me. I wish that Dr. Wilson had talked fifteen minutes longer and had given us his ideas about the problem.

Dr. Cannon mentioned the point, and I agree with him, that the most common constant finding a physician can go by when he is thinking in terms of heart disease is an enlargement of the heart. That is an unmistakable fact; we have observed it so often until we know we are not in error.

Dr. Wilson spoke along the lines which we are thinking, and that is concerning heart disease *per se*, as to etiology. There are very few primary heart diseases. The heart disease that we commonly speak of is the effect on the organ caused by conditions elsewhere, and the arteries or the arterioles seem to offer a great deal for study. Personally, I am very much impressed with the problem of inherited factors concerning arteriosclerosis.

## Brucellosis

By

O. B. MAYER, M.D.

Columbia, S. C.

Brucellosis can no longer be ignored in South Carolina. It has pushed forward as an important public health problem because of its general prevalence and because of the economic loss

which it causes. Authorities state that the disease is definitely on the increase; active cases are present, in all probability, in our community at all times. Therefore our attention should be directed to the peculiarities of the disease, its morbidity, spread and control.

*Historical:* While the disease was known to exist as far back as 1865, it was not until 1886 that it was first proven an entity by Bruce(1). He was a medical officer in the British army, assigned to study the cause of the fever prevalent in the military garrison on the Island of Malta. Apparently he took this occasion to marry and spend his honeymoon on the island. With the aid of his wife he cultured the causative organism from spleens obtained at autopsy from soldiers recently dead from the fever. He called the organism micrococcus melitensis. He carried the study a step farther when he found the organisms present in monkeys which he had injected, twenty-one days earlier. It is strange that although goat's milk was used almost exclusively in the garrison, this animal was not proven to be the host until about twenty years later.

Next on the scene was Doctor B. F. L. Bang(1), a Danish veterinarian, who in 1897 discovered the organism that caused the abortion prevalent in cattle. He gave it the name "Bacillus Abortus," but its pathogenicity to man was not recognized until 1918.

It remained for Miss Alice Evans(2), a native of Pennsylvania, working as an untrained laboratory technician in the Dairy Division of Public Health Laboratory at Washington, in 1917, to show that the cultural and morphological characteristics of the micrococcus melitensis and the bacillus abortus were essentially the same. She demonstrated years later that the different strains reacted similarly serologically.

It is of note that Miss Evans became sick while in the midst of her startling investigation. The sickness began gradually and progressed, making it impossible for her to work. The aching, fever, chills and sweats continued for weeks into months. Finally, when the disease began to wane, she returned to the laboratory, still unaware of the nature of the sickness. A known blood was needed as a control in a certain serological experiment she was setting up in continuing her investigation. To her



utter astonishment the blood agglutinated the Brucella organism and she thus established the diagnosis of her own sickness, when the best of the learned medical profession had failed to recognize it.

The disease is sometimes spoken of as a modern one because of its dramatic unraveling in the twentieth century. So sudden was the unexpected solution thrown upon the world that it required about seven years for the work to be accepted, and the proper recognition given to those concerned.

Hughes(3) gave it the name of undulant fever in 1896 because of the character of its fever. Later the terminology was found inappropriate. It was also known as Malta fever or Mediterranean fever. Miss Evans coined the generic name "Brucella" to represent the group, thus identifying Bruce with the disease. Later she suggested the name "Brucellosis," which is probably a more acceptable term.

The first case in the United States was recognized by Craig in 1904. Keefer of Johns Hopkins, in 1924, probably reported the first proven case bacteriologically and serologically. An epidemic occurred in Arizona in 1913. In 1926, 46 cases were reported in the United States, and in 1932, 1,505 cases. In 1933, 1,787 cases and last year 25 cases were reported in South Carolina. No doubt, every practitioner will have encountered the disease sooner or later.

From information secured from several physicians, it is estimated that at least eight cases occurred in Columbia during 1934. However, only two cases were reported to the State Board of Health. Obviously, physicians are not doing their duty in this respect.

Three strains are generally recognized, the bovine, porcine, and caprine, represented respectively in the cow, the hog, and the goat. Humans may become infected with any strain, but are relatively more immune to the bovine and less to the porcine type. Starr(4).

The incidence of infection among cows is estimated at between 10 per cent and 36 per cent, using as a criterion an agglutination titer 1-80 as positive and 1-40 doubtful. Fitch of the University of Minnesota estimates that about 85 per cent of abortions in cows is due to "B" abortus. Most abortions occur between the 5th and 7th month, but all infected do not abort. In cattle the disease is relatively latent

between pregnancies, but becomes active in the uterus during pregnancy. The reappearance of the disease in a tested herd is probably due to the introduction of an infected cow into the herd.

The placenta, amniotic fluid, and vaginal secretions are heavily infected and continue so for about three weeks after abortion. Contaminated forage may become a source of spread. Nursing calves do not show clinical signs even though organisms may be recovered in the feces. The sow does not appear to develop immunity. Hogs and dairy cattle should not be pastured together, for the porcine type is more infectious to humans and is transmissible to the cow.

Most humans possess, in varying degrees, immunity to Brucellosis. Individuals may consume milk from infected herds for a long time without showing signs of the disease. However, if repeatedly large doses of virulent organisms are encountered, or if resistance becomes low from disease or operation, then the immunity may be overcome and clinical symptoms result.

Naturally, risen cream contains many times more organisms than bottom or whole milk. It is believed that the constant use of milk from small dairies is more apt to cause infection, because of the dilution factor. In large herds milk from the same cow does not go to the same individual daily, and the number of organisms ingested varies.

*Portal of Entry in Man:* There are three routes—by the alimentary tract, through the conjunctiva, and through normal skin or abrasions or cuts. Consumers contract the disease most often by way of the digestive tract from raw contaminated dairy milk or meat. Butchers and attendants of dairy cattle, or slaughter-house employees contract it by direct contact with infected animals, or by rubbing the eye with a contaminated hand. The skin is the most vulnerable and frequent route. The bacteria may pass through normal mucous membrane of the alimentary tract, conjunctiva, or genital tract. The organism then enters the blood or lymph streams, and finally localizes in some organ which acts as a focus.

*Incidence in Man:* More men than women are infected because men predominate in the care of farm animals and are employed almost

exclusively in slaughter houses. Rural dwellers, butchers, and veterinarians show the highest incidence of infection. Meyers(5) in Nebraska tested 1,000 routine blood specimens submitted for Wassermann and 4.3 per cent were found positive for Brucellosis. Study showed that only 2 per cent of those infected had symptoms. Lasting immunity in man generally follows the first infection. White persons have been found infected ten times as often as the negro. The most common age is from twenty to sixty years, although infants and the aged are found with it.

*Incubation:* Incubation period unquestionably varies. Miller states it is between five and fifteen days. There are persons who withstand exposure indefinitely and some are found with high titers of agglutination who have never shown clinical signs of the disease. The variation is dependent upon immunological factors of virulence versus resistance.

*Symptoms:* Probably no other acute infection presents as variable symptomatology. The onset may be mild and gradually pass off relatively unnoticed as in ambulatory cases; again there may be a few weeks of slight aching and not feeling well prior to the actual onset, or it may be ushered in with violent chills and high fever of a septic type, severe headache, drenching sweats, especially at night. In all forms general malaise, aching, and indifference to food are constant. The literature stresses arthralgia and abdominal distress. Neither of these symptoms has been outstanding in the cases under observation. The literature further reports suppurating joints and the similarity to acute rheumatic fever. Instances are also reported where the abdominal symptoms lead to mistake in diagnosis and to eventual operation for an acute appendicitis or gall bladder. The recurring type of the abdominal distress is the differentiating point. A macular or papular skin rash may also be present. The spleen is frequently enlarged, and some times the lymph glands. Abortion in women is rarely due to the Brucella infection.

Originally the fever was described as undulating or appearing in waves, but the disease seems now to have lost this characteristic and is intermittent or septic in type, varying from subnormal temperature to 102 degrees or 104 degrees. Those under my observation have generally shown two peaks of fever in the twenty-

four hours—one in the morning and one in the afternoon. Pulse and respiratory rates vary with the fever. The acute stage continues from a few weeks to months, but the disease tends to become chronic and may last for a few years. Accompanying this is weight loss, weakness, and general decline in health.

In the early stages of Brucellosis, patients have been treated for neurasthenia, typhoid, malaria or rheumatic fever, tuberculosis, endocarditis, influenza, and the like. Complications are recorded as follows: Mastitis, oophoritis, orchitis, joint suppuration, and liver abscess. Endocarditis and myocarditis are less common. Mortality is estimated at between 3 per cent and 5 per cent. Autopsy shows spleen, liver and regional lymph nodes frequently harboring live organisms, which may also be found in the mammary gland and the genital tract; diseased gall bladder and appendices may be foci.

The following brief case synopses are given to emphasize the varying symptomatology:

(1) A white male, age 53 years, had general malaise and headache of two weeks duration, for which an infected tooth was extracted. A few days later chills and fever developed. A secondary blood stream infection was diagnosed. When seen, the temperature curve suggested a Brucella infection. The agglutination test was positive.

(2) A white male, age 10 years, developed tonsillitis and an upper respiratory infection. Slight fever persisted for weeks. Tonsillectomy failed to influence the fever. Later a positive agglutination test was obtained.

(3) A white male, age 40 years, a proven case of Brucellosis, developed glands of the left neck, which continued for weeks. Upon incision pus containing the organism was found.

(4) Several other cases were being treated for malaria.

*Laboratory Findings:* Blood picture—leukocytes may be normal or slightly increased or decreased. The relative or absolute polymorphonuclear cells is considered significant when present. A secondary anemia is constant. A positive blood culture establishes the diagnosis, but is obtained in only 25 per cent of the cases. Diagnosis is ordinarily accepted when agglutination occurs in dilution 1-80 and considered partial in 1-40. The test is not infallible. During non-specific febrile attacks a



low or partial agglutination may be negative or uncertain. It is rarely present before the seventh or tenth day, and it may be weeks before showing. The titer goes up with the height of the disease, reaching a peak about the fourth week. The different strains react essentially alike for agglutination. The reaction may remain positive from six to twelve months, or longer. Intradermal tests are often positive before the agglutination tests, but are less reliable. The diagnosis is then made by correlating the history and the physical and laboratory findings.

*Treatment:* Bed rest, nourishing foods, fresh air and symptomatic relief is the routine. Generally speaking, serums and vaccines have been disappointing. Recently Foshay has produced a serum that has promise. He has also made a vaccine that has given good results in the chronic cases. Serum is not considered of benefit if the disease has continued for four months. Five cases treated by Foshay's method all responded in a satisfactory manner; when similar cases are encountered, the same procedure will be followed.

Prevention of the disease is more easily accomplished than the cure. Pasteurization of the milk is quite effective in rendering infected milk harmless. During epidemics all milk should be so treated and, likewise, all milk that is used from infected animals. The control of diseased

herds meets with difficulties. The owner may have his herd tested and the infected cattle removed, only to find, on retesting a few weeks later, that others are infected. Contaminated forage is an ever present or ready source of spread; likewise is the introduction of new cattle into a herd. Latent infections become active during pregnancy, so that many factors make it hard to prevent infection. Nevertheless, intelligent effort and frequent agglutination tests can do much to stamp out the disease.

Unless the public realizes the economic loss the disease brings on the infected individuals, and the dangerous increase of the disease, their demand for control and supervision of dairy herds will not be sufficient to bring action from the boards of health. The doctors can be of inestimable help in pointing out the needs and dangers to the public. Then an informed public can demand of the law-makers better protection from the disease.

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- (5) Meyers, J. W. Jr.: *Prevent. Med.*, 1931, V 240.
- (6) Foshay, Lee.: Personal communication.

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#### FOR SALE

Operating Table, Instrument Cases and Instruments, Ophthalmos Cap, Laboratory Blood Analysis Set, Diathermy Machine, Infra Red Indirect Lamp, Hanover Alpine Lamp, Tonsillectomy Outfit, Roller top Desk, Reception Room Suite, Microscope, Fluorscope, Electric Sterilizer.

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## PRESIDENT'S ADDRESS

By

DR. S. E. HARMON

Columbia, S. C.

Organized medicine is confronted at this time with many serious complex problems. Ever since I read and studied the report from the divided committee on medical care for the American people that cost one million dollars and five years of activity and work, I have strongly suspected an Italian stiletto in the dark, fundamentally being handled by a political hands and unless the organized medical profession build up a strong coffer-dam of protection around our ideal and efficient system of the study and practice of medicine for the protection of our nation, it will be very much impaired. The politicians of this country are making such a massive, active, insidious, stealthy march upon the medical profession, that I am thoroughly convinced that we will very soon find ourselves in the same predicament of a small company in camp in the time of war, quietly asleep in their tents while the enemy steals through the darkness of the night, unobserved, coming from every direction, and when the little company awakes in the morning, they find themselves surrounded by such overwhelming numbers, with all the machinery of destruction at their command, that they are doomed.

For these and many other obvious reasons, I would ask for the good will and a hundred per cent active support of this entire Association for a greater constructive, organized medical profession. I am deeply conscious of my limitations to cope with the many mighty responsibilities and need the hearty cooperation and support of every member in the medical profession who stands for honest, constructive efficient medicine for the protection of all.

It is my sincere desire that this coming year shall be filled with peace and harmony in every way. But if any latent element smouldering beneath the surface becomes active, we think it is far better and more productive of good to have an open frank, free discussion and understanding of the truth of all problems, than to continue any smothering compromise dissatis-

faction. We may not always agree, which does not necessarily imply a lack of trust and confidence, but an understanding in principles to our good for progress.

If we expect and desire the South Carolina Medical Association to continue to stand for truth and efficiency, we need and must have the assistance and cooperation of every member of organized medicine to assist in causing every doctor in the State who is *eligible* to become an active member of organized medicine. Membership in the State, National and International societies is dependent upon the membership of the county or local societies.

In the December number of the Journal of the South Carolina Medical Association, we find our Secretary quoting Dr. W. J. Mayo, one of the deans of the medical profession in this country and in the world, a man with a master mind speaking before his county medical society November 7th, 1934, following the remarks of Mr. George B. Larson, field representative of the Minnesota State Medical Association, who said: "As I look back on somewhat more than fifty years in the practice of medicine, I recall that my father, a practitioner of medicine, taught my brother and me what relationship we as members of a great profession should hold to the county and state medical societies and to the American Medical Association. He said where the American Medical Association leads I follow because I take it that its officers have done more investigation as to what is right and what should be done in the circumstances with it than I have done." That is equally true of our state and county medical societies. Our county societies of which the Olmsted, Houston, Fillmore and Dodge county societies are a fine example, are a great improvement over the old time county societies because no longer obliged to contend with horse and buggy and muddy roads which made frequent meetings impossible, the doctors have become acquainted with each other and can act as a unit. Mr. Larson has stressed tonight the necessity for the profession to do its best in this time of depression to perform its duty to the patient regardless of whether or not it is satis-

Read before the South Carolina Medical Association at Florence, S. C., April 24, 1935.

Note: I want it understood that this is not all original. A fair part is correlated ideas of others that I have read. S.E.H.



fied with all rules and regulations that the government commissions, more or less political in origin, have imposed upon us." I am sure what Dr. Mayo said to his local society applies to ours and therefore I ask that we accept it to ourselves and apply the same principles in our every day activities.

What has organized medicine to offer in return to its members? Being a member of organized medicine is evidence of the individual doctor's intention to affiliate himself with progressive medicine. It is proof that he wants to maintain and uphold the good standing of our profession, the greatest and most noble of all. It affords constant contact and support of fellow practitioners. It assists in establishing our professional standing. Regular attendance

at meetings of medical societies keeps all in touch with the latest advancements in medical science.

Through the membership of our members in the state, national and international societies, little progress in medicine can occur without some member almost at the next meeting, bringing it first hand to the attention of our local society which affords opportunity for presenting scientific subjects in the form of papers and discussion, which disseminates truth to all.

Organized medicine must survive. Individually we can do very little; organically we can accomplish much in many ways even though we may be in the minority. Actively striving for truth, we can accomplish anything possible that is constructive and right.

## REPORT OF THE TREASURER

Seneca, S. C.  
April 20, 1935

Dr. E. A. Hines, Sec.-Editor  
South Carolina Medical Association,  
Seneca, S. C.

Dear Sir:

At your request I have audited the books of the South Carolina Medical Association and the Journal of the South Carolina Medical Association. You will find hereto attached a statement of receipts and disbursements with certificates supporting the balances reported.

A substantial gain is shown in both membership and dues and advertising over the previous year. Your attention is also called to dividends on deposits in the Seneca Bank of 5 per cent of original balances, bringing the total dividends to 55 per cent.

Yours truly,  
Frances R. Richardson,  
Auditor.

April 20th, 1935.

Dr. E. A. Hines,  
Seneca, S. C.  
Dear Sir:

This is to certify that at the close of business on December 31, 1934, there was on deposit in this bank to the credit of:

E. A. Hines, Treas. SCMA-----\$544.74  
Journal SCMA ----- 851.76

We also certify that according to the records of the closed Seneca Bank the amount of the unpaid balances are as follows:

E. A. Hines, Treas. SCMA-----\$269.34

Journal SCMA ----- 470.01  
Journal SCMA (Time Cft) ----- 451.48

Very truly yours,

C. V. Stribling, Manager.

## STATEMENT OF RECEIPTS AND DISBURSEMENTS, SOUTH CAROLINA MEDICAL ASSOCIATION

For Year Ending Dec. 31, 1934

### RECEIPTS

Balance in banks Jan. 1, 1934	
Defunct Seneca Bank-----	\$ 299.27
S. C. State Bank-----	247.36
Postal Savings -----	1,000.00
	<u>\$1,546.63</u>
Membership Dues -----	1,854.00
	<u>3,400.63</u>

### DISBURSEMENTS

Salaries -----	810.00
Office Expense -----	47.90
Traveling Expenses Sec.-Editor --	134.51
Expenses two delegates A.M.A. --	160.00
Expenses Official Stenographer of	
Convention -----	80.89
Printing -----	350.00
Sundries -----	37.78

Balance in Banks Dec. 31, 1934

Defunct Seneca Bank -----	269.34
S. C. National Bank -----	510.21
Postal Savings -----	1,000.00

1,779.55

3,400.63

STATEMENT OF RECEIPTS AND DISBURSEMENTS  
JOURNAL SOUTH CAROLINA  
MEDICAL ASSOCIATION

For Year Ending Dec. 31, 1934

## RECEIPTS

Balance in Banks Jan. 1, 1934

Defunct Seneca Bank -----\$1,023.89

S. C. State Bank ----- 382.34

1,406.23

Cash on hand ----- 200.00

Subscriptions ----- 1,236.00

Advertising ----- 1,662.96

Refund on check in closed bank -- 5.00

4,510.19

## DISBURSEMENTS

Salaries ----- 1,328.00

Printing ----- 1,310.00

Office Expense ----- 27.94

Annual Audit ----- 25.00

Sundries ----- 46.00

Balance in Banks Dec. 31, 1934

Defunct Seneca Bank ----- 921.49

S. C. National Bank ----- 851.76

1,773.25

4,510.19

COMBINED STATEMENT OF RECEIPTS AND  
DISBURSEMENTS SOUTH CAROLINA MEDICAL  
ASSOCIATION AND JOURNAL OF  
SOUTH CAROLINA MEDICAL  
ASSOCIATION

For Year Ending Dec. 31, 1934

## RECEIPTS

Balance in Banks Jan. 1, 1934

Defunct Seneca Bank -----\$1,323.16

S. C. State Bank ----- 629.70

Postal Savings ----- 1,000.00

\$2,952.86

Cash on hand ----- 200.00

Advertising ----- 1,662.96

Subscriptions ----- 1,236.00

Membership Dues ----- 1,854.00

Refund on check in closed bank -- 5.00

7,910.82

## DISBURSEMENTS

Salaries ----- \$2,138.00

Printing ----- 1,660.00

Office Expense ----- 75.84

Traveling Expenses—Sec.-Editor -- 134.51

Expenses two delegates American

Medical Association ----- 160.00

Expenses Official Stenographer

Convention ----- 80.89

Annual Audit -----

25.00

Sundries -----

83.78

Balance in Banks Dec. 31, 1934

Defunct Seneca Bank ----- 1,190.83

S. C. National Bank ----- 1,361.97

Postal Savings ----- 1,000.00

3,552.80

7,910.82

Assets of Dec. 31, 1934

Cash in Banks and Postal Savings ----- 3,552.80

Furniture and Fixtures ----- 724.77

4,277.57

Liabilities as of Dec. 31, 1934

Due E. A. Hines on Salary 1934 ----- 512.20

## LIST OF MEMBERS BY COUNTIES, 1934

	<i>Paid</i>	<i>Hon.</i>
Anderson -----	36	4
Aiken -----	4	
Abbeville -----	6	3
Bamberg -----	4	
Berkeley -----	8	
Columbia -----	85	15
Charleston -----	84	8
Cherokee -----	7	2
Chester -----	8	5
Chesterfield -----	9	
Colleton -----	9	
Dillon -----	6	
Dorchester -----	5	
Darlington -----	10	
Edisto -----	3	
Fairfield -----	2	
Greenville -----	73	9
Greenwood -----	23	
Georgetown -----	1	
Kershaw -----	15	6
Laurens -----	9	
Lancaster -----	5	
Marion -----	7	
Newberry -----	20	1
Oconee -----	7	4
Orangeburg -----	27	
Pickens -----	9	
Ridge -----	6	
Spartanburg -----	55	2
Savannah Valley -----	5	
Sumter -----	18	6
Union -----	11	2
Williamsburg -----	9	
York -----	23	4
	618	71
Honorary Fellows -----	71	
Total Membership -----	689	



# THE JOURNAL

OF THE

## South Carolina Medical Association

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### OFFICE OF PUBLICATION

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MAY 1935

### THE FLORENCE MEETING LARGELY ATTENDED

The Eighty Seventh Annual meeting of the South Carolina Medical Association goes down in history as a marked success from every standpoint. The attendance was well beyond four hundred. The decision of the Scientific Committee to limit the program to about fifteen papers exclusive of invited guests met with the approval of everybody and the session on the last day closed as was timed.

One of the special features stressed by the

Scientific Committee was that of the invited guests. This year it was decided to bring three distinguished visitors instead of two as usually is the case. All of them were outstanding men in their several specialties and they presented dynamic messages to South Carolina medical men.

The social features at the Florence meeting while of an informal nature were in every way enjoyable.

The Woman's Auxiliary had a splendid meeting as did the South Carolina Public Health Association. These two organizations alone brought more than a hundred people to Florence.

### THE POST GRADUATE OBSTETRIC COURSES

The first course given by Dr. J. R. McCord, Professor of Obstetrics at Emory University, at Anderson, S. C., April 15 to 19 exceeded expectations. Something like one hundred men from the nearby counties received this instruction. Every one of them went away with enthusiastic comments on the highly practical nature of the instruction given by Dr. McCord. These courses will continue throughout the state during the summer. The next one will be held in Spartanburg the latter part of June.

### THE A. M. A. MEETS AT ATLANTIC CITY, JUNE 10 TO 14

South Carolina rarely fails to have its largest attendance of any place in America when the A. M. A. meets at Atlantic City. We bespeak with all earnestness a similar record for members of the South Carolina Medical Association this year. The programs of the various sections of the A. M. A. as well as the general meetings are of unusual interest. There is another reason: We meet this year jointly with the profession of the great country to the North of us, Canada. It will be an unusual opportunity to enjoy the good fellowship of the officers and members of the Canadian Medical Association. It is debatable whether or not attending a medical meeting ever takes the place of a real vacation for the busy doctor. If one undertakes to comprehend all of the activities of the A. M. A. he will be a much overworked

individual. This year, however, the doctor may enjoy a pretty fair vacation and at the same time profit by the scientific spread at his command.

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DR. R. C. BRUCE, PRESIDENT ELECT

The elevation of Dr. Bruce from Councilor of the Fourth District to President Elect of the South Carolina Medical Association is an honor most worthily bestowed. Dr. Bruce has served the South Carolina Medical Association on the Council since 1927. During this period American Medicine has passed through epoch making changes, especially along economic lines and the Councilor bodies of the various constituent State Associations have borne tremendous responsibilities and The Council of the South Carolina Medical Association is no exception. Fortunate it is that men like Dr. Bruce

are still to be found who are willing to assume these responsibilities and give of their time and energy to the limit of their abilities. The Fourth District is one of the most populous districts in the South medically speaking and the Councilor of such a District enjoys a large experience in the problems of organized medicine. As a result of this splendid service Dr. Bruce is peculiarly fitted to fill the office to which he has been called. Dr. Bruce is a native of Kershaw County, South Carolina born in 1877. He is a graduate of the Citadel, The Military College of South Carolina, receiving his degree in 1900. He is a graduate of the Medical Department of Vanderbilt University in 1910. For many years Dr. Bruce has been President of the City Board of Health of Greenville, one of the outstanding cities from the health standpoint in the United States. Dr. Bruce is a general practitioner.

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## PATHOLOGICAL CONFERENCE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

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KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

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### ABSTRACT No. 285, MARCH 1, 1935

Student Barr (reading) Service of Dr. Waring.

White female, age 10 yrs., schoolgirl, admitted 5-8-34, discharged 5-24-34; readmitted 10-25-34, died 11-29-34.

On the first admission there was deformity of fingers, wrists, ankles and knees. Soft nodules were noted about ankles. Spleen was palpable. Her tonsils were removed during that admission. Diagnosis: Multiple Infectious Arthritis.

History (from Mother): Child was well until 3 yrs. before admission, when swelling of the joints was first noted. The process went from one joint to another. The joints were not painful. Mother said that child had never been well since, the joints swelling at frequent intervals. Two months before admission albumin and blood were present in the urine, and blood has been noted frequently since. Continuous fever (duration not stated), with night sweats. Gradual weight loss. Abscesses in ears opened

by family physician one week before admission.

Physical: Temp. 101.6, pulse 126, resp. 28, B.P. 120/80. A pale underdeveloped child. subcutaneous nodules noted on inner side of great toe and along some tendons. Profuse discharge from left ear, slight from right. Teeth carious. Chest small and thin, expansion limited. No abnormal findings. Heart: Apex in 5th interspace in anterior axillary line, enlarged to percussion. Rate rapid, impulses equal in rhythm and force. No murmurs heard. Abdomen: Liver palpable and tender. Spleen palpable as far down as umbilicus. Definite deformity with nodules on joints of toes and hands, fingers partially flexed. Knees and elbows deformed.

Lab: Urine (10/26; 11/12): Sp. Gr. 1013, NSQ; Albumin 2+, 4+, sugar, acetone, pus and blood neg.; Casts, occasional hyaline. Blood (10/26, 10/30, 11/23): Hb. 52%, -, 50% (D); RBC -, 2,500,000, -; WBC 6,200, -, 6,950; polys 61%, -, 60%; lymphs 28%, -, 44% (?); monos 10%, -, 6%; achromia 2+. Thick and thin smear for Plasmodia 10/26) neg.



Feces normal. Sputum (11/23; 11/25; 11-26): brown, watery, pus 1 +, no T.B. Mantoux 1-1000 (10/27) 3 +. EKG: "Right axis deviation. Inversion T waves all leads. (P3 not identified)." X-Rays: see chart. Blood culture (10/26): Negative.

Course: Temperature showed daily intermissions to normal for first 7 days, rising to 100-102, usually in P.M. Later temp. became remittent, rising to 102-104 during P.M. falling to 99-101 during morning. For last 3 days temp. fell below normal each day, rising to about 104 in P.M. Pulse 100-160, usually above temp. curve on chart. Respirations 24-40, possibly slightly faster towards the end. 10/29 Both ear drums incised. Culture from left ear: Short chain streptococci. 11/8 Glands palpable in left axilla. 11/4 - Non-productive cough developed. 11/25 250 cc. of whole blood given by transfusion. 11/16 Few rales heard posteriorly at base of right lung. Breath sounds coarse and slightly increased at right base. Few fine crepitant rales heard at base of left lung. 11/22 "Heart sounds show gallop rhythm." Cough continued. Patient became progressively weaker and died 11/29/35 at 8 P.M.

Dr. Robert Wilson, Sr. (conducting): Mr. Salley, will you open the discussion of this case?

Student Salley: We have a child ten years old, with a history of tonsillitis, multiple joint involvement, palpable subcutaneous nodules and a palpable spleen. This group of findings suggests rheumatic infection more than chronic infectious arthritis. The joint pain was minimal, but that is still possible in rheumatic infection. Still's disease is also possible, and the urinary findings would go well with that condition, being due to amyloid changes in the kidney. Tuberculosis must also be considered in view of the daily afternoon fever, the chest findings and a positive Mantoux. Rheumatic infection may be present either with or without heart disease, but the enlargement of the heart and the electrocardiographic tracing here suggest that the heart is involved. The absence of a valvular murmur is difficult to correlate with this conception, but its absence does not rule out the possibility.

I believe that the illness began in this case as a rheumatic infection involving the joints and the heart, with the later development of tuber-

culosis, and with death from a terminal pneumonia, as the chest findings developed rapidly towards the end.

Dr. Wilson: Do you think that there is any chance of a more active infection of the heart than rheumatic fever?

Student Salley: Yes. And I would like to see the x-ray of the heart.

Dr. Wilson: That will come later. Miss Willis, will you continue?

Student Willis: The heart is said to be enlarged, and therefore I believe that we have to include some cardiac disease in the diagnosis. In the absence of a valvular murmur or a pericardial rub, I am inclined to believe that the condition is a rheumatic myocarditis. Of course, an endocarditis can be present without a murmur, especially in the early stages, before deformity of the valve has developed.

Dr. Wilson: What do you think of the possibility of tuberculosis?

Student Willis: I don't believe that tuberculosis can be ruled out, but the cough and fever can be explained on the basis of a cardiac condition, or the fever might well be due to the ear infection. Too, she might have had an active infective endocarditis to give her the fever. The previous history suggestive of rheumatic infection and the rapid pulse would go well with such a condition.

Dr. Wilson: Will anyone else add anything?

Student McMillan: The several occasions on which she had albumin and blood in her urine might well have been a focal nephritis from endocarditis.

Student Pope: It doesn't seem to me that the diagnosis of tuberculosis need be made. While it cannot be excluded definitely, there are no symptoms suggestive of tuberculosis which could not be explained just as well on the basis of an infective endocarditis, and therefore the single diagnosis should be sufficient. I believe that subacute bacterial endocarditis comes nearer explaining the whole case than any other single diagnosis.

Dr. Wilson: Dr. Rudisill, will you show the x-rays?

Dr. Rudisill (demonstrating x-rays): On this patient's first admission, only her joints were x-rayed. As can be seen here, the joint spaces are narrowed, and the articular surfaces of the radius and the ulna are definitely eroded

at the wrist. This affirms the clinical impression of an atrophic arthritis, but the etiological agent cannot be identified, of course. This resembles rather closely the cases of Still's disease that I have seen.

On October 29th, during her second admission, the first x-ray of the chest was taken. The heart shadow does not appear materially abnormal. The hilar shadows are somewhat prominent, but not sufficiently so to diagnose the chest as anything but normal. This next film, taken about 3 weeks later, shows a definite change in the size and shape of the heart. There is both a left-sided and a right-sided enlargement, with the former apparently predominating. This type of cardiac enlargement is very suggestive of rheumatic heart infection. There is also some thickening of the main inter-lobar fissure on the right, and some increased clouding at the right base; these lung findings are not characteristic of anything, and could be due to either tuberculosis or pneumonia.

Dr. Wilson: Will anyone who has already spoken add anything, now that they have seen the x-rays?

Student Salley: I still believe that the child had tuberculosis, because of the continued afternoon fever and the weight loss. No doubt the abscessed ears did cause some of the fever, but I do not believe that they are sufficient to cause such a fever. And the positive Mantoux test cannot be disregarded. I believe there is some heart infection, but whether an endocarditis or a myocarditis, I am not prepared to say. It seems to me that there should have been a valvular murmur.

Student Willis: I still believe that there is no need to include tuberculosis in the diagnoses, as the heart infection and the abscessed ears will explain the fever.

Student Pope: I still believe that there is an endocarditis. The right ventricular enlargement, as indicated by the electrocardiogram, cannot be overlooked, and this suggests a valvular lesion at the mitral valve. The absence of a valvular murmur is much less important in the differential diagnosis than its presence would be.

Student McNulty: I don't believe that we have enough here to say an endocarditis. There is no blood in her urine during her stay in the hospital, and her blood culture is negative. I

believe that the case is more apt to be a Still's disease with an old rheumatic valvular stenosis (mitral).

Dr. Wilson: But the cardiac enlargement took place over a period of 2 or 3 weeks.

Student McNulty: Yes, that is a very rapid enlargement, and I believe that it must have been more of a dilatation than actual hypertrophy.

Dr. Wilson: We shall get Dr. Lynch to give us the last word on this case.

Dr. Lynch: The case is one of subacute bacterial endocarditis, but, for the benefit of Mr. Salley, she also had tuberculosis.

The body was considerably emaciated, and there were numerous hemorrhagic spots over the anterior chest wall and the face. There was no edema. Several sub-cutaneous nodules were noted over the sterno-clavicular joints and over the Achilles tendons. The joints of the hands and feet were enlarged and spindle-shaped. There was about 100 cc. of clear fluid in the pericardial sac, a moderate effusion. The heart (demonstrating autopsy specimens) is somewhat enlarged from dilatation, but not materially from hypertrophy. The myocardium is pale. A row of small fibrinous vegetations can be noted on the mitral valve leaflets, and there are possibly some smaller fibrous nodules. There is no definite myocarditis, either grossly or microscopically. There is a moderate amount of myocardial degeneration. The spleen is about 3 times the normal size, and the malpighian follicles are especially prominent, a condition that goes along with subacute bacterial endocarditis. The lungs show several small hemorrhagic infarcts, and there are numerous small depressed areas in the renal cortex, representing infarction, and microscopically there is a focal nephritis, doubtless embolic. In addition there is a definite caseation necrosis of a portion of the right lower lobe, with a similar necrosis of the draining lymph nodes, thus constituting the complex of primary tuberculosis.

At the time of the autopsy, we were uncertain whether we were dealing with a simple rheumatic endocarditis or a subacute bacterial endocarditis. Many writers believe that there is no real difference between the two, but that the latter is merely a different manifestation of the former. There was no microscopic lesion, rheumatic or otherwise, anywhere in the heart



except on the valve. This valve (micro-projection apparatus) shows a moderate fibrous tissue proliferation throughout, with a small thrombus attached here; as you can see, it is beginning to organize from beneath, and there are a large number of polymorphonuclear cells collected about its base.

The microscopic study of a small joint from the foot caused a suspicion of rheumatic infection. There were several miliary nodules of collagenous material collected near the joint membrane, but the cellular features were largely absent, so they cannot be said to be Aschoff bodies definitely.

There was one negative blood culture. The streptococcus viridans, which causes a large majority of cases, is a notably elusive organism, and many cultures must be taken before the diagnosis of subacute bacterial endocarditis can be discarded on that account.

Both the clinical and the pathological picture go best with subacute bacterial endocarditis, but there are several features, especially clinical ones, which suggest rheumatism. Differentiation between these two conditions can never be satisfactory until the etiological agent of rheumatic fever is discovered. Pathologically, the Aschoff body is not sufficient for distinguishing the two, because they are frequently found in cases of subacute bacterial endocarditis, where they are frequently used as a foundation for the statement that a rheumatic infection of the heart usually precedes the onset of subacute bacterial endocarditis.

Dr. Wilson: Many writers assume that all of these cases of chronic arthritis in children (excepting, of course, joint tuberculosis, and a few other specific infections) have their origin in a rheumatic infection. In children, I believe that we must assume that affection of the heart is very apt to be present. In this case, the rapid enlargement of the heart shadow, as seen by x-ray, indicates rather an acute damage to the heart, probably of an infectious nature.

Dr. Waring: When I saw this case on the ward, I thought that there were two separate conditions present, first, a chronic joint disease, and second, some acute cardiac infection. The possibility of tuberculosis was not considered strongly, in spite of the positive Mantoux. The ears might well have been the focus in this case.

Dr. Lynch (closing): The strongest evi-

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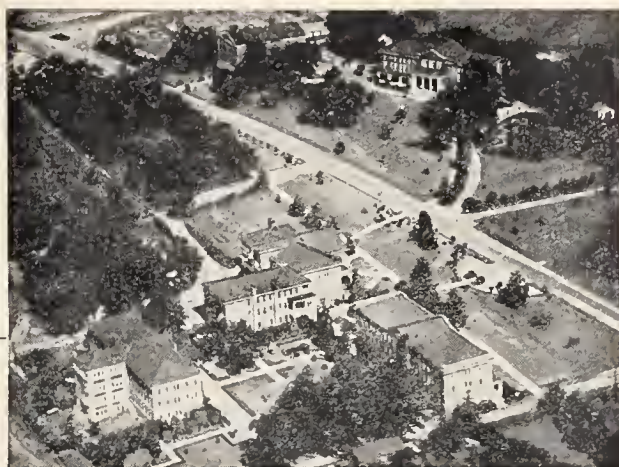
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dence here against rheumatic infection is the absence of the typical rheumatic lesions usually to be found in myocardium, pericardium and endocardium. The manifest enlargement of the heart, taken clinically and by x-ray to mean a myocarditis, was a combination of cardiac dilatation and a moderate pericardial effusion. The subcutaneous nodules could occur in either subacute bacterial endocarditis or rheumatic infection. I do not believe that the cardiac infection in this case was of long duration.

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# THE JOURNAL

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### WELCH BACILLUS INFECTIONS. TREATMENT BY AUTOFILTRATE METHOD

By

GEORGE R. DAWSON, JR., M.D.

*Resident in Surgery Roper Hospital,  
Charleston, S. C.*

Gas gangrene infection has been described since 1853 but Welch in 1892 was the first to attribute its cause to an anerobic bacteria. Since the natural habitant of the causative organisms is the intestinal tract of man and animals and the soil, it is in those countries which are the most thickly populated that gas gangrene occurs most frequently.

It was not until the World War that Gas Bacillus infections came into prominence. The soil of Belgium has for centuries supported a teeming population and abounds in all sorts of fecal bacteria. The clothes and bodies of the soldiers in trench warfare were covered with mud or dust and when bullets or shrapnel forced this soil into the muscles a great many developed gas gangrene and about a half of those becoming infected died. In contrast to this, gas gangrene was extremely rare during the Civil War.

Today in civil practice Gas Bacillus infection is not infrequently seen. It occurs most frequently after gunshot wounds, compound fractures and street accidents. In the literature there are a number of cases reported following abdominal operations, appendectomies, gangrenous cholecystitis, intrauterine infections, tonsillectomies, G. C. epididymitis, intramuscular injections, hypodermoclyses, and hypodermic injections.

### ETIOLOGY

There is no specific gas bacillus responsible for all cases—the infection is commonly, but by no means always, a mixed one. The three organisms which are most commonly claimed to be the cause of gas infections are: 1. *Bacillus Welchii* or *B. Aerogenes capsulatus*, which is found in 82 per cent of cases, *Vibrio Septique*, which is found in 10 per cent of cases and *B. Oedematiens*, which is found in 5 per cent of cases. They are anerobic spore forming organisms and commonly inhabit the intestinal tract of man and animals. *B. Welchii* is the great gas producer. It requires glycogen for food—hence it lives in muscle. *Vibrio Septique* produces little gas but a potent toxin and is claimed to be 100 per cent fatal. *B. Edematiens* produces an intense white edema and it does not travel far from the site of inoculation.

### PATHOLOGY

Gas bacillus infection is essentially an infection of muscle. When the muscles are invaded the infection travels from end to end most rapidly. The effort of the body to resist its spread is feeble for there is no definite line of demarcation—no leukocytic infiltration as a barrier to its spread. Instead an intense serous effusion precedes the bacterial invasion and intramuscular planes are filled with serum. The organisms cross this to the next portion of muscle to be attacked. Besides the serous exudation there is gas formation due to the breakdown of sugar in the involved muscle. This gas is non toxic but adds to the tissue destruction by producing ischemic gangrene. The blood stream is often invaded and some strains are hemolytic. There is a thin dirty looking serosanguinous discharge with a fetid odor.



There is marked local swelling. Of the cardinal signs of inflammation swelling and pain are present; the other two, redness and heat, are conspicuously absent.

#### DIAGNOSIS

Crepitation of gas in the tissues is usually the first thing that leads us to suspect gas gangrene. The bacteriologist nearly always, and the physician often recognizes the characteristic smell. The wound usually looks dirty and there is a sero-sanguinous discharge with a fetid odor. Gas can be demonstrated by X-ray in tissues where it can not be palpated. The positive diagnosis of the causative agent is made by smear and culture. The systemic results depend on the virulence of the causative organism and the extent of the infection. They vary in our cases from low grade fever and malaise to high grade fever with delirium.

#### PROPHYLAXIS

Anti-toxin sera, trivalent, is used as a prophylactic. In the German army the Gas Gangrene mortality was 0.3% in wounded soldiers who had prophylactic injections and 3 per cent in those who had not.

#### PROGNOSIS

Untreated cases are almost 100 per cent fatal. Miller, in a review of the literature from Lister to 1931 found the mortality to be 49 per cent—which was the same mortality for the A.E.F. Roper's mortality in cases which were not treated by Welch B filtrate has been 83 1-3 per cent.

In general the prognosis depends on three factors—the virulence of the organism, the location and the treatment. The prognosis is much better if the infection is in an extremity—the best if in the leg below the knee. Since the infection spreads by muscle and since practically no muscles cross the knee there is usually a halt at the knee. For this reason amputation in the thigh region has quite frequently halted the infection. There has been only one case of gas bacillus infection below the knee to die in Roper Hospital, and this case had far advanced cardio vascular disease and thrombosis of the femoral vein. The infection is most serious when it occurs in the buttock or trunk muscles.

#### TREATMENT

It has been the results of the filtrate treatment that excited my interest in gas bacillus infections. (The accompanying table shows the treatment and results in cases of Gas infection due to the Welch Bacillus). For a number of years Dr. Mood our bacteriologist has treated Welch Bacillus infection with W. Bacillus filtrate (autogenous) when requested to do so by the attending surgeon. The four cases I have seen all recovered. Of the 17 cases of Gas Bacillus infection I have been able to gather from our records the Welch Bacillus was identified in all but one case. Dr. Mood says the filtrate treatment is not as successful in those cases where the gas forming organism is other than the Welch Bacillus.

All of our cases that were not treated by filtrate died except one—a mortality of 83 1-3 per cent.

All of our cases that were treated with Welch Bacillus filtrate recovered except one—a mortality of 11 per cent.

The one case treated with Anti-toxin sera recovered. In all our cases our general treatment has been wide incisions, debridement, antiseptic irrigations and amputations in some cases. In the filtrate treatment 1-2 cc of Welch Bacillus filtrate which was made from the last case in Roper (which is usually several months to a year old) is given hypodermically or intramuscularly as soon as the diagnosis is made. We swab the wound and send the swab to Dr. Mood who cultures the causative organism and prepares the Autofiltrate. The next day we give 1-2 cc of the autofiltrate and 1 cc for each preceding day until the culture from the wound is negative for Welch B. The cultures are negative in a few days after the treatment is started.

There is one point that I wish to stress and that is that amputation is deemed unnecessary in practically every case in which the autofiltrate is used. There were only three cases that had amputation under the filtrate treatment. The only case that died under the filtrate treatment had an amputation. The cases treated with filtrate that escaped amputation all recovered. The cases that had neither specific injections nor amputations all died.

Dr. Mood relates from memory a very in-

teresting case in which the filtrate treatment was used about the time of the World War. The day after an injury to his upper arm the patient had a most virulent and rapidly spreading gas infection which spread from the arm to the chest. Gas Crepitation could be felt over the entire chest wall. The temperature was very high and the patient very toxic. The attending physician said no treatment would be of avail and no surgical treatment was accomplished for the patient was given up to die.

Culture showed a Welch B. and an auto-filtrate was prepared and the patient was given daily injections of the autofiltrate. To every one's surprise the day after the first injection the fever was down and the patient felt much better. The temperature returned to normal within a few days and the patient made a complete recovery.

## SUMMARY

1. Autogenous Filtrate of B. Welchi has proven to be successful in the treatment of Gas Bacillus Infections due to B. Welchi.

2. How and Why the filtrate treatment is successful is unexplained.

3. Amputations are believed to be contra-indicated when the filtrate and wide incisions are used.

4. Numerous wide incisions and antiseptics are probably the most important part of the treatment.

## CASE REPORT

The case we have to present tonight is most interesting. He has recovered from a Welch Bacillus infection, from a depressed fracture of the skull, laceration of the brain, the removal of 8 square inches of his skull, and a staph infection of his cerebro-spinal fluid.

The patient, a 34 year old negro man was admitted to Roper unconscious 9-4-34. He had been in an auto wreck. There was a depressed fracture of the skull over the left Rolandic area and lacerated wounds of the left arm and forearm. All wounds were grossly contaminated with dirt. About six hours after admission when the patient was out of shock (he

## ANALYSIS OF CASES OF WELCH BACILLUS INFECTIONS

Case	Location	Type of Injury	Filtrate Used	Amputation	Recovered	Died	Complications
1.	Leg	Gunshot	Yes	0	Yes		
2.	Thigh	Gunshot	Yes	0	Yes		
3.	Leg	Gunshot	Yes	Yes	Yes		
4.	Thigh	Lacerated Wound	Yes	0	Yes		
5.	Wrist	Gunshot	Yes	Yes	Yes		
6.	Tibia	Compound Fracture	Yes	0	Yes		
7.	Arm	Gunshot	Yes	0	Yes		Depressed fracture of skull. Operation—Infection (staph) of cerebro spinal fluid.
8.	Leg	Gunshot	Yes	0	Yes		
9.	Thigh	Lacerated Wound	Yes	Yes	Yes		Died soon after amputation. Apparently of shock.
10.	Tibia & Fibula	Compound Fracture	Yes	Yes		Yes	Died of lobar pneumonia and Chronic tetanus 2 weeks after Welch Bacillus infection had subsided.
11.	Thigh	Gunshot	0	0		Yes	
12.	Buttocks	Lacerated Wound	0	0		Yes	Tetanus infection and Fracture of vertebra and ribs.
13.	Leg	Arterio-scl Gangrene	0	Yes		Yes	Thrombosis of femoral vein.
14.	Abdomen	Gunshot	0	0		Yes	Died of intea abdominal hemorrhage after operation.
15.	Arm-& fore Arm	Compound Fracture	0	Yes		Yes	
16.	Leg	Gunshot	0	Yes	Yes		
17.	Thigh	Lacerated Wound	0	Yes	Yes		Given trivalent sera.



was still unconscious) he was taken to the operating room. The depressed portion of the skull was removed and also a fragment as large as a silver dollar. The lacerated wounds of the arms were sutured after antiseptics were applied.

Two days after admission the temperature rose to 103. Gas could be palpated about the wound areas on the arm and gas odor detected. The sutures were immediately removed, the wounds laid wide open and 1 per cent Dakins applied as a continuous wet dressing. A culture and a smear were taken from the wound and *B. Welchi* found. 1-2 cc of Welch Bacillus filtrate was given intramuscularly (This filtrate had been made from the last case of Gas Gangrene in Roper—about three months previously.) The next day and each succeeding day for 14 days the patient was given 1 cc. of the autogenous filtrate prepared from the drainage from the wound on the arm.

The temperature came to normal in 4 days and repeated cultures for *B. Welchi* were negative after 4 days.

Now the patient has a partial hemiplegia on the left side (the depressed fracture was over the right Rolandic area.) The wounds are healing nicely.

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## MEMORIAL ADDRESS—DR. WILLIAM EGGLESTON

By

F. H. McLEOD, M.D.,  
Florence, S. C.

The President Dr. S. E. Harmon

Fellow Members of the South Carolina Medical Association, Visitors and Guests:

At this time, we have a very solemn, sad duty to perform—to do honor and pay our respects to our President who was to have been with us, presiding over this session, but who has passed to the Great Beyond, from which no one ever returns.

At this time, I am going to call on Dr. F. H. McLeod, a very close friend of Dr. W. M. Eggleston, to present the memorial on the life and untimely death of our beloved President.

I am going to ask that all rise and stand to receive this report and to remain standing with bowed heads for the full time of one minute after the report has been received, in reverence to his memory.

William Eggleston was a man of tender compassion and loving sympathy, of wise conduct, governed by reason and judgment.

Those of us whose joy it was to intimately know him found a charmingly delightful friend and an exceedingly attractive associate. His conversation was always interesting—no bitterness of speech, no hasty thought, no biting sarcasm.

One of his characteristics was love and loyalty for his friends and the thorough enjoyment of medical meetings and other opportunities of meeting groups of his friends.

Some one asked Kingsley the secret of his strong joyous life and he replied: "I had a friend."

For nearly thirty years I had known and loved him. No relationship on earth between man and man could have been more beautiful. Always the same—doing some kindness, ever showing his love. To me an example of fidelity, sacred and sublime to the very end. His appreciation, his full understanding, his every contact wonderful and out of the fullness and sincerity of his heart. Only those who have been privileged to have such a companion may know the loneliness, the emptiness, the sadness.

William Eggleston's friendship was an inspiration. Every good man's life provides an environment in which others can see God. Such a life was his.

After graduation in medicine he taught

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Read before the South Carolina Medical Association at Florence, April 24, 1935.

anatomy in the Medical School at Sewanee. Later he located in Hartsville, where he engaged in the general practice of medicine. He did a large amount of work, and his love of medicine and his enthusiasm made him very happy—the knowing and serving people.

In the role of general practice he was the ideal Doctor. His interest in those who came under his professional care went further than the immediate disability of his patient. He taught the patient and the household the practical care of the sick, hygiene, sanitation. He taught them preventive medicine. He took his patients into his confidence. They felt secure in his keeping. Faith and interest were mutual. Surely he loved medicine.

He continued his large general practice until his health became impaired a few years ago. During his long years of practice he did not think of his own physical needs. His patients were first. He rested when they were better. Gradually his health failed, but he kept on. His patients knew and understood their obligation to him. Be it said of him, however, that he never embarrassed those who did their best.

Soon after locating in Hartsville he was instrumental in eradicating the town of mosquitoes. At that time the incident was regarded as pioneer work. It created considerable interest and the ease with which it was done was a stimulus to such measures. Always doing preventive medicine—in the home and community. Sanitary measures were his hobby.

For more than twenty-five years he was a member of The State Board of Health, and until he became ill, had never missed a regular meeting of the Board. He was its Chairman at the time of his death. His years of service in this work were years of pleasure. He enjoyed the work and the meetings of the Board. He loved the work and for years it was almost his only change of activity—his relaxation.

He stood for progressive health measures and was a staunch advocate of the relative duties of the Public Health Officer and the man in general practice.

He believed in public education as the function of the Health Officer, other than in the event of an epidemic. He was outspoken against any movement that tended to State medicine. He wanted no infringement on the rights of the man in general practice and he

believed that there should be no physical contact between the Health Officer and the individual.

His faith in the medical profession was supreme. He believed that State medicine would destroy the initiative of the physician and destroy the sacred ties between the man in general practice and those who sought his professional care.

He stood for the support of all medical affairs in this State and avowedly stood for adequate appropriations for all health measures. He was a friend of our own Medical School and believed that its excellent work should be rewarded by State aid in sufficient amount to provide its necessary needs.

He advocated the establishment of The State Tuberculosis Hospital at State Park and was greatly interested in its conduct. Its success pleased him greatly. He had always believed that the tubercular patient should be treated in the same climatic situation in which he must live if cured. He lived to see this theory amply proven by the splendid results obtained at State Park.

When America went to war he promptly volunteered. He was not sent over seas, but served at Camp Lee in Virginia, as a Medical Officer. He was disappointed that he could not be nearer the scene of hostilities, but he did not dissent and cheerfully and gladly rendered the high class service he so well was fitted for.

As a citizen he did his duty. He was a devout churchman and his loyalty and devotion to his Church was an integral part of his life and character. Never too busy to go to church. Never too busy to do his church work, whatever it might be.

His interest in the community embraced every form of activity. His business capacity led him into banking and many local enterprises, and for several years his County needed and obtained his supervision. His record of its financial management and organization were models of efficiency.

Dr. Egleston's was a busy life—a real life of service. His devotion to duty, his innate modesty, integrity and self control were dictates of virtue and his affectionate regard for the right. He had a profound respect for an honest man.

The greatest event in his life was the Presi-



dency of The State Medical Association. His appreciation of this honor carried with it an effort to serve the Association as best he could. His physical condition did not permit him to serve as he wished to, but he gave largely and generously of his time.

His generous nature, his devotion to duty invest his memory with respect and admiration. His excellence of manhood, the rounded fullness of his life, his service to mankind, are attainments which we cherish with interest, love and affection, and at the great final review he shall hear: "Servant of God, well done!"

### RIDGE MEDICAL SOCIETY MEETS

The Ridge Medical Society met in Dr. Timmerman's office at 7:30 o'clock. Dr. Brunson of Ridge Spring presented a three weeks old white baby with a large protuberance on its head.

It is the twelfth child of its parents eleven of which are living and healthy.

This case elicited much discussion and reports of somewhat similar cases.

Dr. Taylor of Batesburg presented a case of osteo-myelitis of the mandible in a middle aged white man and gave a resume of the etiology and treatment, etc.

This case was discussed by Drs. King and Frontis who assisted Dr. Taylor with the treatment of this case.

One of the unusual conditions was that no teeth had been extracted before the illness of the patient and the X-Ray failed to show any infection until the third week of the affliction.

Dr. Ballinger reported a case of bullet wound in the head of a young white woman who had not realized that she had been shot. She realized that she was injured but thought that lightning had caused it.

Dr. Asbill discussed this case and described the size, texture, etc., and distance that such bullets could travel and the harm that might be done by them.

Dr. Wise told of a man in Saluda being shot and the inability to find the culprit and facetiously said that he must have been in Batesburg when he fired the shot.

Dr. Ridgell read a letter from Professor Southerlin of The Batesburg Grammar School in which he commended Dr. Taylor most highly for his address to the students on the teeth and the proper care of them.

He also commended Dr. Taylor and the society for the good which is being accomplished.

Dr. Wm. B. Timmerman of Johnston and Dr. J. F. Byrd of Edgefield were unanimously elected members of our society.

Various committee reports were made.

Drs. King and Hanna made brief reports of a recent meeting of The Columbia Medical Society which they attended and of Dr. McLester's excellent address.

Dr. F. E. Zemp of Columbia read an instructive paper on ancient medicine, hospitals, etc.

The following were elected officers for the next year.

Dr. W. W. King, President.

Dr. P. A. Brunson, Vice President.

Dr. Wm. B. Timmerman, Vice President.

Dr. W. P. Timmerman, Sec.-Treas.

The president was authorized to appoint the various committees.

Supper was served in The Rutland Hotel where short talks were made by Drs. Zemp, M. Hanna, Wm. B. Timmerman and O. P. Wise.

The Ladies Auxiliary was delightfully entertained in the home of Dr. and Mrs. E. C. Ridgell.

The Auxiliary officers for the next year are.

Mrs. J. D. Waters, President.

Mrs. W. P. Timmerman, Vice President.

Mrs. E. C. Ridgell, Secretary.

Mrs. F. G. Asbill, Treasurer.

Mrs. M. L. Brogden, Delegate.

W. P. Timmerman, Secretary.

April 15, 1935.

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OF THE

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H. H. Plowden, M.D.-----Columbia, S. C.

#### *Surgery*

Wm. H. Prioleau, M.D., F.A.C.S.---Charleston, S. C.

#### *Eye, Ear, Nose and Throat*

J. F. Townsend, M.D., F.A.C.S.---Charleston, S. C.

#### *Dermatology and Syphilology*

J. Richard Allison, M.D.-----Columbia, S. C.

#### *Gastro-Enterology and Proctology*

W. T. Brockman, M.D.-----Greenville, S. C.

#### *Nervous and Mental Diseases*

E. L. Horger, M.D.---State Hospital, Columbia, S. C.

#### *Medical Reserve Corps*

Col. J. E. Daniel, Med. Res.-----Greenville, S. C.

#### *Public Health*

B. F. Wyman, M.D.-----Columbia, S. C.

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Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

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JUNE, 1935

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### OBSERVATIONS AT THE AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, JUNE 10 TO 14

The attendance probably surpassed all previous records, numbering about ten thousand. The South Carolina contingent came from all parts of the State. The scientific program was equal to any hitherto presented, and the commercial and scientific exhibits were extraordinary. Everything was conducive to a great meeting. The building facilities satisfied every demand, as might be anticipated when it is

considered that we were meeting in the largest building of its kind in the world. The legislative branch of the A. M. A. at the Atlantic City meeting was characterized by a solidarity of sentiment strongly in favor of standing by the age old Principles of Medical Ethics at all costs. There was a reiteration that these Principles are not to be abrogated when a physician becomes a member of a group, a member of a hospital staff or a member of a clinic, even in the slightest degree. A harking back to these basic Principles and anchoring there permanently will do more to stabilize medicine in America than any other gesture.

It was brought out at this meeting that medical education in this country in the next year or so will be put to a crucial test in more ways than one. That is one of the great fundamental foundation stones of the economic structure now being shaken by diverse currents. There is going on the most searching inspection of medical schools and their teaching hospitals ever conducted in any country. Forty-five of these schools have been critically surveyed, and the remainder will be reported on at the next A. M. A. meeting. It is expected that some schools may have to undergo much reorganization to remain in Class A. In this picture comes the question of limiting the student body, for nearly everyone agrees that there are too many doctors in the United States. Fewer and better doctors may be a slogan by this time next year not to be blotted out until the goal has been reached. This would settle many economic problems now so pressing. Along this line comes another pronouncement of the A. M. A. at Atlantic City, that is, that teaching hospitals receiving internes shall be required to give them first class training. Many believe that unless these internes are accorded their just rights, these hospitals should be removed from the Class A list.

For many years resolutions have been introduced looking to the requirement of the A. M. A. to study contraceptives with the view to bringing about modifications in the laws prohibiting universal teachings about them on the part of the medical profession. This year the effort was crowned with success, for a committee of the Board of trustees has been empowered to study the whole problem and report on it at a future meeting.



There was a clarification of the constitution and by-laws of the A. M. A. in regard to the eligibility of physicians moving their membership from one state to another. In many cases a physician moves to another part of the country and retains his membership in the State society from which he moved far beyond the one year limit. This involves the question of jurisdiction and sometimes questions of medical ethics. As it stands now, a doctor moving to a new location must in a reasonable length of time identify himself with the organization there.

One of the long looked for reports was that of the bureau on medical economics of the A. M. A. to suggest plans for providing a satisfactory medical service by the medical profession in every locality. The report by Dr. R. G. LeLand, Chief of the Bureau, and his staff was an exhaustive study of many hundreds of plans now in operation in various parts of the country. As was to be expected, no one plan yet devised can be applicable to all parts of this country. It is advised, therefore, that county medical societies cooperating with the State organization continue their investigations along this line.

So-called State medicine did not come in for the extended discussions in the House of Delegates as at previous meetings for the reason that the basic principles agreed upon by the American Medical Association had already been outlined at previous meetings. There was a note of optimism, however, discernible to the effect that socialization of medicine is certainly not going to take place in this country any time soon.

The reports of the officers of the A. M. A. indicated definite progress along all lines. The financial report was quite satisfactory. The membership was reported decidedly on the upgrade, only a few short of one hundred thousand now. Wonderful work continues to be done by all the bureaus. The oldest of them, the Council on Pharmacy and Chemistry, is now coming into its own as should be the case. The A. M. A. is doing a great work in regard to foods. This leads to the important news for South Carolina that the Board of Trustees of the A. M. A. appointed Dr. William Weston and Dr. J. W. Jervey of this State, together

with Dr. E. H. Cary, past president of the A. M. A. of Texas, to make contact with the Federal Government in the interest of a national food laboratory and other means of investigation of foods throughout the country. A resolution to this effect was adopted by our House of Delegates last year and also by the House of Delegates of the A. M. A. at Cleveland.

It is a source of gratification that Dr. Kenneth M. Lynch, Professor of Pathology, at the Medical College of the State of South Carolina, was elected Vice President of the American Medical Association.

The election of the other general officers of the A. M. A. assures sound leadership the coming year, and the place of meeting will be Kansas City.

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#### OCONEE COUNTY MEDICAL SOCIETY

The April meeting was held at Seneca. Dr. Edgar A. Hines, Jr. of the Staff of the Mayo Clinic read a paper on Hypertension and held a clinic presenting the various phases of hypertensive disease. Dr. Hugh Smith of Greenville and Dr. R. C. Bruce, Councilor of the Fourth District were present and participated in the discussions. This meeting was largely attended by the members of the County Medical Society as well as representatives of the dental profession.

The May meeting was held in Walhalla, Wednesday the 29th. The essayist was Dr. W. A. Strickland of Westminster who read a comprehensive paper on The Common Cold. Dr. Strickland not only gave the accepted theories as to the causation of colds but presented elaborate statistics showing the prevalence of colds throughout the United States per capita. While the essayist believes that much remains to be learned about colds he felt that much may be done to prevent them and much may also be done for the comfort of the patient suffering from a cold. At the close of the meeting the Society adjourned to the home of Mrs. H. B. Brennecke for a joint meeting with the Woman's Auxiliary. Delightful refreshments were served by the hostess.

E. A. Hines, Secretary.

## WOMAN'S AUXILIARY

### SOUTH CAROLINA MEDICAL ASSOCIATION

#### ADVISORY COUNCIL

Dr. F. H. McLeod, Chairman	Florence, S. C.
Dr. W. P. Timmerman	Batesburg, S. C.
Dr. C. O. Bates	Greenville, S. C.

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First Vice President, Mrs. Carl Epps	Sumter, S. C.
Second Vice President, Mrs. J. R. Young	Anderson, S. C.
Recording Secretary, Mrs. J. H. Crooks	Greenville, S. C.
Corresponding Secretary, Mrs. J. W. Bell	Walhalla, S. C.
Treasurer, Mrs. L. H. McCalla	Greenville, S. C.

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Hygeia, Mrs. W. C. Abell	Columbia, S. C.
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Mrs. L. O. Mauldin, Co-Chairman	

#### COUNCILLORS

District 1 Mrs. Kenneth Lynch	Charleston, S. C.
District 2 Mrs. Price Timmerman	Batesburg, S. C.
District 3 Mrs. J. I. Wicker	Newberry, S. C.
District 4 Mrs. O. C. Bennett	Spartanburg, S. C.
District 5 Mrs. Frank Strait	Rock Hill, S. C.
District 6 Mrs. J. C. McLeod	Florence, S. C.
District 7 Mrs. D. O. Winter	Sumter, S. C.
District 8 Mrs. V. W. Brabham	Orangeburg, S. C.

### PRESIDENT'S ADDRESS

By

MRS. CHARLES P. CORN,  
Greenville, S. C.

As president of the Woman's Auxiliary to the South Carolina Medical Association, I have the honor to submit the following report for the year 1934-35. Again we come to the cross roads! We pause to glance at another year's work. We plotted our course at the beginning of the year. Have we kept to the main highway?

Just a year ago you conferred upon me the highest honor within your power, by electing me to the office of President of this organization. I have fully appreciated this honor and I have made an earnest effort, to the very best of my ability to serve you in a creditable manner. This year with it's many duties, and manifold cares is past and I come to place before you the results of my labors.

As your president looks back over a year crowded with pleasure and work she feels again the joy that has been hers, for to her every request from officers and chairmen came a whole-hearted response—Each member, chairman and officer, in her own way has projected her personality into the Auxiliary, making the aggregate result, one which she trusts has added to

a structure, the foundation of which was built by her predecessors.

At the beginning of the term of office last May in Charleston, minutes of the post executive Board meeting, in Charleston, were typed and sent to each County president and Board member.

Monthly letters or cards have been sent to each County Auxiliary, thereby keeping in touch as best we could. No one could have had a more harmonious, cooperative, or hard working board, and I am glad to have this opportunity to offer them my public thanks and appreciation at this time.

The first Vice-President who is our organization chairman has worked faithfully sending numbers of letters in the interest of organizing new counties.

The second Vice-President, or program chairman, was asked to send out the study envelopes published by the National Auxiliary to each County president for use on her programs and they have been used by some Auxiliaries.

All of the Auxiliaries have contributed to the Student Loan Fund and your chairman of this fund feels sure that we shall be able to assist probably two students to go to college next year.

One great need of our Auxiliary was contact—contact with the County Auxiliaries and with the State organization. Thanks to Dr. E. A. Hines our editor of the South Carolina Medical Journal and to our efficient publicity chairman, we have had splendid reports in our South Carolina Medical Journal almost every month.

In this connection I'll state that I've had the pleasure of visiting several County Auxiliaries this year—Spartanburg, Pickens and Oconee.

At the Oconee County Auxiliary I had the privilege of speaking before the joint meetings of the Medical Society and Auxiliary on the Aims of our Auxiliary. This talk was given at the request of Dr. E. A. Hines. Was invited to Columbia, Seneca and Saluda and Batesburg, but was unable to go.

We have tried to stress Hygeia at all of our meetings, as our State is behind in it's quota of



subscriptions, though the state chairman this year has worked hard to increase the number of subscribers.

I want to ask each Auxiliary if they have not done so already to appoint a historical chairman to preserve records of deceased doctors. Some day we hope to have these published in book form.

The special features of this year's administration are as follows:

First: Two new county Auxiliaries have been organized, making 12 Auxiliaries in all, with paid up membership of 525 members.

The Coastal Society—The combined counties of Colleton and Beaufort with Mrs. Carroll Brown, Jr. as president. The county of Florence, our hostess Auxiliary who is so delightfully entertaining us, with Mrs. O. T. Finklea as president. We are thrilled over these two new Auxiliaries and give them a hearty welcome into our fold.

The second outstanding feature of our administration is that the state constitution and by-laws have been put in order and printed. Copies of the printed constitution have been sent to each county president and board members and Dr. Hines published it in the Journal for us.

Several telegrams, and telephone calls have been made and hundreds of letters and cards have been written this year. Commend me to a post card—quick—easy—cheap—adequate. What need for more?

Our mid year Board meeting was held at the Poinsett Hotel in Greenville in the fall. Twelve members were present. Following the meeting, copies of the executive board minutes were typed and sent to each board member.

As State president I have attended two national Board meetings in Cleveland, Ohio, and also had the honor of singing on the Memorial Service at Cleveland, last June.

Also attended the Board meeting of the Southern Medical Auxiliary at San Antonio, Texas, and represented South Carolina at the Southern Medical Auxiliary there.

Have recently been appointed as chairman of the Budget Committee of the Southern Medical Auxiliary by Mrs. J. Boner White, of Atlanta, who is president of this organization.

Have also recently been appointed as chairman of the committee on Resolutions by the National president, Mrs. Tomlinson, and will be on the program in Atlantic City in June.

This year has been such a wonderful experience I can hardly stop talking about it. In closing let me again thank you all for the splendid support you have given me, for the cordial hospitality I have received in each county I have visited and for the friendships I have made. Am sure you may be relied upon to carry on with my successor, Mrs. Owens, whose services as President of Richland County Auxiliary fits her for leadership of State.

It has been a pleasure to meet here in Florence, this beautiful little city, located in this wonderful section of the State. Here we are

enjoying the hospitality of the doctors and their wives and others in the vicinity who are doing all in their power to make our stay pleasant and profitable.

I also want to voice my appreciation to the members of the South Carolina Medical Society and especially to my advisory council, Dr. F. H. McLeod, Dr. C. O. Bates, and Dr. Price Timmerman and to Dr. E. A. Hines the editor of South Carolina Medical Journal. To have served as your leader for this year is an honor and a privilege which shall ever be cherished and I shall always feel that my life will be richer for my year as president of your State Auxiliary.

In closing may I leave with you this little verse:

"The year is closed, the record made,  
The last deed done, the last word said  
The memory alone, remains  
Of all it's joys, it's griefs, it's gains  
And now with purpose full and clear  
We turn to meet another year."

## MINUTES

### SOUTH CAROLINA MEDICAL ASSOCIATION

Eighty-Seventh Annual Session

Florence

April 23, 24, and 25, 1935

### MINUTES OF HOUSE OF DELEGATES

Tuesday, April 23, 8 P. M.

The House of Delegates of the South Carolina Medical Association met in the auditorium of the Florence Public Library on Tuesday, April 23, 1935, and was called to order at 8:45 p. m. by Dr. S. E. Harmon, President-Elect.

Dr. Harmon read the following message to the House of Delegates, after which the members rose and stood for a minute in silence, in respect to the memory of Dr. William Egleston, President.

MEMBERS OF THE HOUSE OF DELEGATES OF THE SOUTH CAROLINA MEDICAL ASSOCIATION:

I wish officially to call attention at this time to the untimely death of our President, Dr. Wm. Egleston. I ask you all to rise and stand with bowed heads for one minute in respect to his memory.

Your Board of Councilors, who are the trustees of this Association when the House of Delegates is not in session, decreed that upon the death of the President, the President-Elect should assume charge of the office.

Does this or not meet your approval?

It is a great sorrow that our President is not with us to preside. However, it becomes my duty to take his place. I promise to serve you and organized medicine to the best of my ability.

The medical profession is being confronted at this time with many serious and complex problems. It will require the very best mature minds to study and cope with the many problems that are coming up and will continue to come up for a long time. I therefore respectfully request that when you fill the many offices of honor and trust, you fill them with men who are interested and will work, men who are capable and who have the courage to do their duty.

On motion, duly seconded and adopted, the House of Delegates concurred in the action of the Board of Councilors in decreeing that, upon the death of the President, the President-Elect should take charge of the office.

The report of the Committee on Credentials was called for by the President-Elect, and Dr. E. M. Hicks, Chairman, reported 48 duly accredited delegates present.

Dr. E. A. Hines read his report as Secretary-Treasurer, after which he spoke of the postgraduate course in obstetrics now being conducted in the State by Dr. J. R. McCord, of Atlanta, Georgia, and

of the plan to form a postgraduate medical assembly, reading recommendations regarding such an assembly from a committee representing seven counties.

On motion of Dr. E. F. Parker, Charleston, the report of the Secretary-Treasurer was accepted and ordered to be spread upon the minutes.

Dr. J. R. Des Portes, Fort Mill, read his report as Chairman of the Board of Councilors, which, on motion, was adopted.

The report of the State Board of Health was called for and was read by Dr. E. A. Hines, Vice-Chairman. On motion of Dr. R. S. Cathcart, duly seconded, the report was accepted and ordered to be spread upon the minutes.

Dr. Roger G. Doughty, Chairman, read the report of the Committee on Public Policy and Legislation, and then made a further report as follows:

#### *Further Report of Committee on Legislation*

There is also a bill up concerning State Board of Health Activities. Until tonight I had not considered it likely that it would pass. However, Dr. Blackburn of Marion, thinks it likely that it will be passed. If it is, it will take the State Board of Health away from the Medical Association. It was introduced by Dr. Ben Adams, of Columbia. It is not a good bill; it is a radical bill. You have just heard the report of the State Board of Health. I want to plead with you tonight to do something about this bill, in your own interest if not in that of the State Board of Health.

Another bill has been introduced, by Dr. Blackburn, for the sterilization of inmates of State institutions. He feels that it is a good bill. He feels that it is linked up with the State Board of Health bill. The State Board of Health bill is a bill in which we are obliged to be vitally interested. There is only one way to defeat it that I know of, in the House, and we must defeat it in the House. It was introduced by Ben Adams. The only way to defeat it is for every one of you to go down to the telegraph office when you leave here and send a telegram to your representative opposing it. If you will adopt a resolution here tonight and have the Secretary send a proper telegram to Columbia, to back up your individual telegrams, we shall get somewhere. If the bill is passed, it will be on your own heads.

Now, certain ones of you will be contacted and asked to go to see your representative at home during the weekend. I am going to ask you to do that. You will be given ammunition for your talks.

There is another matter that is up before us, that has been taken up in Columbia, and that is the insurance of employees by a corporation to be formed. This corporation, for the sum of twenty-five cents a week or something like that, is to insure an employee, or an employee and his family, for hospitalization—not for medical attention but for hospitalization—



for three weeks annually. This plan has been fostered by Duke and that group. It is similar to, probably better than any of, the plans now in operation in the State of South Carolina. The corporation is to be made up of appropriate trustees; I think four are doctors, four from the State Hospital Association, and four are business men; and it is to be run by a paid manager, the funds to be collected from the people insured, and the insured person to be hospitalized in any hospital he desires, under the care of any physician he picks, for a period of not over three weeks in any one year. It seems to be a very good scheme. The recommendations made were: (1) That the Committee recommend to this body that approval of the scheme be given, with three provisos—First, that the reserve fund which it is necessary to establish on account of the drain that may occur on the financial structure in case of epidemics be limited to a specified amount, and the sum of \$20,000 was named. This is in order to keep the fund from ever becoming a menace, to limit the financial ability of the corporation. Second, to have that corporation recognize the State Medical Association as being the only authority for granting any medical service to people so hospitalized. The question of pathological work and x-ray work comes up. Those things must be decided by the medical profession and not by the corporation. Third, that the Hospital Association and the corporation work with the Medical Association to get through the legislature a law forcing all such organizations to submit to those provisos and to those two limitations by the State Association.

At the conclusion of his report, Dr. Doughty moved that the Board of Councilors be empowered to act in the formation of a corporation to set up a plan of hospital savings and that the Board of Councilors also be empowered to act for the South Carolina Medical Association in granting any powers reserved to the Medical Association under the three provisos named.

This motion was seconded and, after discussion, was adopted by a rising vote.

On motion of Dr. J. H. McIntosh, the House of Delegates went on record as approving the bill, now pending in the General Assembly of South Carolina, providing for the sterilization of inmates of State institutions. The motion received several seconds and, on being put to vote, was carried.

Dr. Douglas Jennings offered the following motion: That the House of Delegates put itself on record, and that the individual delegates express themselves to their representatives, as approving the present set-up of the State Board of Health, and disapproving any change therein. Motion seconded. It was suggested that the members from each county get together and wire their representative. After discussion by several members, Dr. Blackburn, the representative from Marion County, was given the privileges of the floor and spoke on the bill concerning the State Board of Health. Dr. Jennings' motion was then put to vote and was adopted.

At this point, the House of Delegates recessed for fifteen minutes, in order that the suggested telegrams might be sent by the members to their representatives.

The House reconvened at ten-thirty p. m.

Dr. W. Atmar Smith, chairman, read the report of the Committee on Public Health and Instruction, which, on motion of Dr. James A. Hayne, was adopted, the recommendation in the report being also adopted.

The President next called for the report of the delegates to the American Medical Association, and Dr. J. H. Cannon read the report. On motion of Dr. J. W. Jervey, it was accepted as information and ordered to be spread upon the minutes.

The report of the special Committee on Health Insurance and Allied Problems, appointed by the late President, was next called for, and Dr. R. S. Cathcart, the chairman, read the report. Dr. R. E. Abell moved that the report be accepted, that the recommendations of the Committee be adopted, and that the President appoint the committee of five recommended, to be known as the "Standing Committee on Medical Economics," with the clear and distinct understanding that the said Standing Committee on Medical Economics shall have full authority to act as they think best when the House of Delegates is not in session. Motion seconded by Dr. Parker. The President recognized Dr. Cannon, Delegate to the American Medical Association, who read a letter received by him from the American Medical Association, and Dr. Cannon read a letter, under date of April 15, 1935, from Dr. Olin West. The motion to adopt the report, with its recommendations, was then put to vote and was carried.

The President then called for the report of the Committee on Necrology, and Dr. Thomas R. Gaines, the Chairman, read the report, the members standing while the names of the deceased physicians were read.

Dr. J. I. Waring, Charleston, read the report of the special Committee on Mental Hygiene (in the absence of the chairman, Dr. Olin B. Chamberlain). On motion of Dr. Parker, the report was adopted.

Dr. W. M. Sheridan, a member of the special Committee on the Study and Control of Cancer, read the Committee's report, which, on motion of Dr. Parker, was received as information and ordered to be spread upon the minutes.

#### *New Business*

Dr. C. O. Bates, of Greenville, extended an invitation to the House of Delegates to hold the 1936 meeting of the South Carolina Medical Association in Greenville.

The President presented Dr. W. R. Dancy, fraternal delegate from Georgia, who expressed his pleasure in being present and extended to the members of the South Carolina Medical Association an invitation to attend the meeting of the Medical Association of Georgia, which is to be held in May.

Secretary Hines read a telegram from the Mayor

of Rock Hill extending an invitation to the Association to meet in that city next year, and an invitation was also given by Dr. E. E. Herlong, of Rock Hill.

On motion of Dr. McIntosh, duly seconded, the invitation to meet in Greenville was accepted.

Secretary Hines read a telegram from Dr. Frank M. Lander, Delegate from Anderson County, saying that he was unable to attend, and a telegram from Dr. H. Marshall Taylor, President of the Southern Medical Association, extending greetings.

#### *Miscellaneous Business*

Dr. Robert Wilson spoke briefly on the needs of the Medical College of the State of South Carolina and offered the following motion: That the President appoint a committee from the South Carolina Medical Association, representing the several sections of the State, to cooperate with the Board of Trustees of the Medical College of the State of South Carolina in endeavoring to secure an adequate appropriation for the maintenance of that institution. Motion carried.

On motion of Dr. F. H. McLeod, the following resolution was adopted: Resolved, that the delegates use their individual influence with their legislators to secure adequate support for the Medical College of the State of South Carolina.

Dr. J. P. Price reported that 71 telegrams were being sent to members of the legislature, at Columbia.

Dr. Browning suggested that if the small county medical societies were encouraged to send in reports of their activities to the South Carolina Medical Journal, and if the reports were published, it would be a valuable aid to the work of such societies. Dr. Hines, Secretary-Treasurer, said that he had endeavored at various times to secure reports from the small societies and that he would cooperate in giving publicity to any sent in.

Dr. R. S. Cathcart offered the following motion, which was duly seconded: Resolved, that the House of Delegates elect an Associate Editor of the Journal to assist Dr. Hines, the Editor, and that this matter be referred to the Council with power to act. An amendment by Dr. J. R. Des Portes, providing that such Associate Editor agree to serve without pay, was accepted by Dr. Cathcart, and the motion was adopted as amended.

#### *Election of Officers*

The President called for nominations for President-Elect, and Dr. C. O. Bates, of Greenville, nominated Dr. Robert C. Bruce, Greenville. Nomination seconded. A motion was made that the nominations be closed and that the Secretary cast the unanimous vote of the Association for Dr. Bruce, for President-Elect. This motion was duly seconded and, on being put to vote, was carried, and the Secretary cast the vote of the Association for Dr. Bruce. Dr. Bruce was declared elected.

For Secretary-Treasurer, Dr. William Weston, Columbia, nominated Dr. E. A. Hines, Seneca, for

re-election, which nomination received several seconds. It was moved and seconded that the nominations be closed and that the President cast the unanimous vote of the Association for Dr. Hines, which motion was adopted. The vote was cast, and Dr. Hines was declared elected.

#### *Councilors—*

The following Councilors were elected:

First District—Dr. J. H. Cannon, Charleston, (re-elected).

Third District—Dr. W. L. Pressly, Due West, (re-elected).

Fifth District—Dr. J. R. Des Portes, Fort Mill, (re-elected).

Seventh District—Dr. T. R. Littlejohn, Sumter, (re-elected).

Fourth District—(To succeed Dr. R. C. Bruce, now President-Elect) Dr. Hugh Smith, Greenville.

(Dr. J. H. McIntosh nominated Dr. Sam Orr Black, of Spartanburg, for Councilor of the Fourth District, and Dr. Arthur McElroy, of Union, was also nominated, both nominations being seconded. Dr. R. E. Abell moved that the nominee receiving the lowest number of votes, if no one received a majority, be eliminated, and this motion was seconded and was adopted. A vote by ballot was taken, resulting as follows: Dr. Smith, 40; Dr. Black, 18; Dr. McElroy, 15. Dr. Smith was declared elected Councilor for the Fourth District.)

#### *Members of the State Board of Medical Examiners*

Dr. John C. Caldwell was nominated to succeed himself as member from the Fifth Congressional District. Nomination seconded. It was moved that the nominations be closed and that the Secretary cast the unanimous vote of the Association for Dr. Caldwell, which motion was seconded and, on being put to vote, was carried.

Dr. N. B. Heyward was nominated to succeed himself as member from the old Seventh Congressional District. Nomination seconded. A motion was offered to close the nominations and that the Secretary cast the unanimous vote of the Association for Dr. Heyward, which motion was adopted.

#### *Members of the State Board of Health*

Dr. R. S. Cathcart nominated Dr. Kenneth M. Lynch, of Charleston, to succeed Dr. Robert Wilson. Nomination seconded. It was moved that the nominations be closed and that the Secretary cast the unanimous ballot of the Association for Dr. Lynch. Motion seconded and adopted.

Dr. C. F. Williams, Columbia, offered the following motion: Resolved, that the House of Delegates go on record as giving a vote of thanks to Dr. Wilson for the wonderful service he has rendered to the State of South Carolina. Motion seconded, and carried by a rising vote. Dr. Wilson expressed his very sincere appreciation.

Dr. Douglas Jennings, Bennettsville, nominated Dr. Walter Mead, of Florence to succeed Dr. William Eggleston (deceased). Dr. W. R. Tuten, of Fairfax, was



also nominated. A vote by ballot was taken, resulting as follows: Dr. Mead, 40; Dr. Tuten, 23. Dr. Mead was declared elected.

Dr. D. LeSesne Smith, Spartanburg, was nominated to succeed himself as a member of the Board. Nomination seconded. Motion that the nominations be closed and that the Secretary cast the unanimous vote of the Association for Dr. Smith. Seconded and carried.

Dr. W. R. Wallace, Chester, was nominated to succeed himself. Nomination seconded. Motion to close the nominations and that the Secretary cast the vote of the Association. Motion seconded and carried.

Dr. L. D. Boone, Aiken, was nominated to succeed himself. Nomination seconded. Motion that the nominations be closed and that the Secretary cast

the vote of the Association for Dr. Boone. Motion seconded and adopted.

Dr. C. B. Earle nominated Dr. F. M. Routh, of Columbia, to succeed himself. Nomination seconded. Motion that the nominations be closed and that the Secretary cast the ballot of the Association for Dr. Routh. Seconded and carried.

Dr. J. P. Price, Florence, nominated Dr. E. A. Hines, Seneca, to succeed himself. Nomination seconded. It was moved that the nominations be closed and that the President cast the vote of the Association for Dr. Hines, which motion, being duly seconded and put to vote, was adopted.

No further business appearing, the House of Delegates adjourned *sine die* at twelve-twenty o'clock a. m.

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## OBSTETRICS AND GYNECOLOGY

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J. D. GUESS, M.D., GREENVILLE, S. C.

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### THE OCCIPUT POSTERIOR, AN OBSTETRICAL PROBLEM

The incidence of the occiput posterior position in vertex presentation is greater than has been taught in obstetrical text books. They are frequently not recognized, and in these cases may cause no difficulty in labor. At other times they may present real problems.

The non-recognition of the occiput posterior, explains both the reason why their incidence is understated and why at times they give rise to serious difficulty. Recognition of the underlying cause of dystocia goes far in solving the problem of its relief.

In a recent article (Amer. Journal Obstetrics and Gynecology, 28:5, Nov. 1934) W. C. Danforth, skillful obstetrical diagnostician, gives statistics, based on a series of 1565 cases from his private practice. Each woman was examined by him early in labor and presentation and position determined.

Danforth found the occiput posterior in 443 cases, an incidence of 27.1 per cent in his series. The occiput was posterior and to the right in 380, and posterior and to the left in 57. The greater incidence of R. O. P. over L. O. P. is universally recognized and corresponds with the greater incidence of L. O. A. over R. O. A. Spontaneous rotation and delivery occurred in 125 cases, and spontaneous rotation and de-

livery by simple outlet forceps occurred in 175 cases. Thus spontaneous rotation occurred in 69 per cent of his cases. In 143 cases (31 per cent) spontaneous rotation did not occur.

Potter (Version—1922), who tries to deliver his cases by podalic version and extraction at the end of the first stage of labor, stresses the relative frequency of occiput posteriors. Naturally he is unable to speak with regard to the frequency with which they fail to rotate.

Williams (Obstetrics, 6th. Edition) states: "In 5488 cases of labor at the Johns Hopkins Hospital, in which the vertex presented, we observed 635 occipitoposterior presentations (11.3 per cent). The number of primary occipitoposterior positions was probably twice as great as is here indicated, but owing to the fact that many of our patients were not examined until well advanced in the second stage of labor, it happened in many cases that anterior rotation had already occurred."

There are a number of factors that operate either singly or in unison to give rise to the occiput posterior position, but these may be resolved into a single ultimate factor, namely, failure of the head to engage in or to maintain flexion. It is associated with extension, of course, to a degree less than that of face or brow presentation.

In almost every case of occiput posterior position certain difficulties may be expected

in labor and certain steps should be taken to render these less noxious. Labor may be expected to be erratic and irregular, the pains tending to develop slowly and irregular. Labor is likely to be delayed. Actual suffering in the first stage of labor is greater. The cervix dilates more slowly and frequently incompletely. Thus labor tends to be decidedly longer. One should attempt to preserve the membranes intact as long as possible, and one should try to conserve the strength of the patient as much as possible. Bladder and rectum should be kept empty. Causing the patient to lie on that side toward which the occiput points aids in producing rotation.

Even though complete rotation occurs, as it will do in the majority of cases, except when the babies are relatively small, long hard labor will be required, and rotation may not occur until the advancing head begins to distend the perineum.

In those cases where complete anterior rotation does not occur four things may happen. There may be no rotation, and labor may become obstructed. Rotation posteriorly may occur, resulting in an occipitoscaryl position. These may deliver spontaneously or by the aid of forceps. They usually cause extensive laceration of the perineum. Rotation anteriorly may proceed to a point where the sagittal suture lies transversely, so that one has to deal with the so-called deep transverse arrest. Engagement may not be possible and the head may be arrested as a posterior at the superior strait.

The first problem is one of diagnosis. If one has recognized the condition early, he is in position to anticipate a slow erratic labor and to recognize its cause. If dystocia occurs, he is in position to proceed with judgment and a sense of assurance in the exercise of the obstetrician's art. Quoting Williams again, he says:

"To my mind the main cause of the dread in which posterior presentations are held is the fact that they frequently escape recognition with the results that the large number which rotate anteriorly and end spontaneously are overlooked, and only those cases are recognized in which rotation either fails to occur, deep transverse arrest results, or the occiput rotates into the hollow of the sacrum. Furthermore, these conditions are not diagnosticated until

operation interference becomes necessary, and even then not until repeated failure at forceps extraction leads to careful examination and to the recognition that the instrument has been applied improperly."

The second problem and one that is being actively discussed in the literature is the safest and best method of handling the situation, once the cause is determined.

Podalic version is the method of choice when the arrest is at the superior strait. Cesarean section is not indicated solely by reason of such an arrest.

After engagement has occurred, version is not a safe procedure unless one is highly skillful, and the use of forceps is safer. But here again presents a problem, for obstetrical leaders differ in their methods.

Danforth has described a method of manual rotation of the head to an anterior position after which forceps are applied. Many others use a similar method of manual rotation.

Bill applies his solid bladed forceps to the head with the pelvic curve directed toward the anterior face, rotates the head with the forceps, removes and reapplies the forceps, a modified Scanzoni maneuver, which was first described by Smellie, and was practiced by Tarnier. This method is favored by Williams, when manual rotation fails. A modification of this method is to draw the head down on the perineum before rotating with the forceps.

Shears (Obstetrics, Normal and Operative—3rd. Edition, 1920) advises downward traction with a Tarnier forceps, giving at the same time a spiral turn to the handles.

Those who use the Kielland forceps, make a cephalic application of this instrument which possesses little pelvic curve and rotate and extract the head without reapplication. Their use requires skill for they may do great damage to the maternal soft parts.

De Lee describes a method of forceps application and extraction which he terms the "Key in Lock" technique. This is described fully in his text book. He stresses gentleness throughout, and if this injunction is followed, it would appear that his method is the safest for both mother and child of the various methods of forceps rotation, when used by the less skilled on the occasional case.



## SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

### BLACK SPIDER BITE

Lately the lay press has given great importance to the bite of the Black Spider. There is some question as to whether it is becoming more common in this State, or whether it is only that it is more often recognized and reported. At any rate it behooves us to know something about it—otherwise when we encounter it, it will likely escape our recognition. A very good account of the subject is given by Drs. J. M. Frawley and H. M. Ginsburg of Fresno, California—J.A.M.A. 104:1790, May 18, 1935.

The scientific name for the Black Spider is *Lactrodectus Mactans*, the female of which species is known as the Black Widow. "It is a large shiny black spider with a spherical body and long slender legs. On the ventral side of the abdomen is an hourglass shaped red or yellow spot. The dorsal surface is usually marked by one or more small red dots." It is generally found around refuse heaps and in outbuildings. A common history is the occurrence of bites on the genitalia in outside privies.

There is some doubt as to the seriousness of the bite. Several series of cases have been reported in which there was no mortality. In those cases reported as fatal, an autopsy had not been performed, thus the proof is left in doubt. Several factors influence the result, chief among them being the susceptibility of the individual; the type of bite as regards the amount of poison and whether it was injected into the blood stream, or only under the epidermis; and the kind of treatment, alcohol apparently being contraindicated.

There is pain and swelling at the site of the

bite, with pain throughout the body, particularly in the extremities which become cramped and spastic. This is soon followed by severe pain over the abdomen and rigidity of the muscles, with nausea and frequently vomiting. A burning sensation of the soles of the feet is sometimes present. There is anxiety, headache, ringing in the ears and dizziness. The blood pressure is elevated about 35mm and the polymorphonuclears are slightly increased. The abdominal pain and rigidity may be so marked as to simulate a ruptured peptic ulcer. Important in diagnosis is that there is no point of localization and that the abdominal symptoms are always preceded by the spasm of the muscles of the extremities. Also the patient is not in shock, and the pulse and temperature are normal.

As with a great many conditions early diagnosis is prerequisite for successful treatment. This is directed toward relieving the pain and the muscle spasm, very much as in eclampsia and parathyroid tetany. Stimulants such as alcohol and strychnia are contraindicated. In the series of cases reported by the author magnesium sulphate has been very satisfactory. A 20 cc ampoule of a 10 per cent solution is given intravenously. This is repeated as necessary to overcome the hypertension and the spasticity of the muscles. In eleven cases treated last summer only one dose was necessary, and the patients were usually free from symptoms within twenty-four hours. Morphine is given to relieve pain, and a barbiturate to insure rest. A soap suds enema is administered at the start. Fluids are given freely by mouth.

Editorial Note: Calcium intravenously has been reported as giving excellent results. Not unlikely parathyroid extract would be effective.

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### EDISTO MEDICAL SOCIETY

The regular monthly meeting of the Edisto Medical Society was called to order at 2:00 p. m. Thursday May 23, 1935, at the Hotel Eutaw in Orangeburg, with the Vice-president, Dr. C. I. Goodwin, Holly Hill, presiding.

A motion was made by Dr. Truluck and carried to hold the regular monthly meeting on Wednesday instead of Thursday on account of Thursday being a half holiday during the summer.

Dr. Truluck read a short article from a busi-

ness magazine on health insurance which drew a great deal of discussion. Not a single member present expressed himself as being in favor of health insurance.

Dr. C. I. Green, a delegate to the state convention, was absent but sent a complete report of the action taken by the House of Delegates. This report was confirmed by Dr. A. W. Browning another delegate to the convention.

Regret was expressed as to the recent deaths of Drs. Geo. H. Walter an active member and E. J. Wannamaker a former member of the society. The following committee on resolutions was appointed: Drs. C. I. Green, V. W. Brabham, and G. M. Truluck.

A committee was also appointed from each county to cooperate with the E.R.A.

The scientific program was as follows: "Head Injuries" as discussed at the state convention by Dr. Fay was discussed by Drs. A. L. Black and A. W. Browning each of whom covered the discussion in a most interesting manner.

In the absence of Dr. L. C. Shecut, Drs. A. W. Browning, H. M. Eargle, and L. Wells discussed "Nephritis in Pregnancy."

Dr. G. M. Truluck gave an interesting review of Dr. Pollitzer's paper, "The Indications For the Removal of Tonsils in Children."

The county health officer, Dr. G. C. Bolin discussed the Rabies situation in the state pointing out that large numbers were reported and that some method should be sought to stamp it out.

The following were present: Drs. J. W. Wyman, V. W. Brabham, J. S. Matthews, C. A. Mobley, G. C. Bolin, Leon Wells, A. W. Browning, A. L. Black, H. M. Eargle, C. I. Goodwin, G. M. Truluck, J. A. Forte, and Jaul Connor.

There being no further business the meeting adjourned.

H. M. Eargle, Sec. & Treas.,  
Edisto Medical Society.

#### COLUMBIA MEDICAL SOCIETY

The Columbia Medical Society met on Monday, May 13, 1935, in the Crystal Room of the Columbia Hotel.

#### *Regular Scientific Meeting—*

1. Nostrums, a Public Health Menace—Dr. E. S. Cardwell.

2. Pre-Cancerous Lesions—Dr. H. H. Plowden.

Benj. Rubinowitz, M.D.,  
Secretary.

O. B. Mayer, M.D.,  
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### MALIGNANT MELANOMA (BLACK CANCER)

*By*

KENNETH M. LYNCH, M.D.  
Charleston, S. C.

It is not my purpose here to discuss in any detail the pathology of malignant melanoma, the exact nature of the cells from which it arises, the reasons for its dangerous behavior, or the technic of methods of treatment, but to relate certain observations out of which has come a profound and hateful regard for this important neoplasm.

The common name, black cancer, long given to malignant melanoma, is one most appropriate to its character. Given because of the common colour of the tumor, the name becomes of deeper significance in an understanding of its treacherously malignant qualities. Although at times its characteristic color may not be exhibited, literally as well as figuratively, it is black in nature, and our knowledge of the reasons for its behavior and the prospect we encounter in its established phase are deeply clouded in the same depth of darkness.

My first clearly recalled case of malignant neoplasm was of this order, and one of the latest was like it. In the twenty-five year interim a number of tragic examples have made such an impression that they are readily recalled without recourse to my records.

The first case referred to was that of a young white woman who had developed during a period of a few months great numbers of bluish subcutaneous nodules distributed in rows from the foot to the groin of one leg. She had watched them begin and grow, without an idea

of their origin or meaning, and had not thought of their kinship to a small pigmented mole which had existed on the dorsum of her foot since she could remember.

The last case referred to is also that of a young white woman. At the time she was seen she had been under the care of a physician for several months, having x-ray treatment of a small pigmented mole in the skin of the left groin. This had been present as long as she could remember but several months ago had become irritated and increased in size. At the time she was seen the primary growth was no larger than a half dollar, it was raw and its edges indurated; the treatment used had merely aggravated it. There were numerous subcutaneous nodules all over her body and she had lost the sight of one eye from a growth within it, and the roentgenogram disclosed established pulmonary metastasis.

The first case has been concluded for twenty five years, the latter will be within probably a year from the time when the primary naevus commenced to grow.

Among those which come to mind without effort at recollection in the interim between these two occurrences are the following:

A young white woman developed a lump in the axilla. Search of the breast revealing no abnormality, the axillary tumor was excised for biopsy. The pathologist thought the condition was metastatic cancer from the breast and advised the radical breast operation. From study of the microscopic preparation it appeared that this tumor was in reality a metastatic melanoma, in spite of its pigmentless mask, and inquiry developed the fact that a small brown mole had been removed from the skin of the elbow about a year previously.

A few months ago I was asked to do a frozen

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Read before the South Carolina Medical Association, April 24, 1935.



section biopsy on another lump at the border of the axilla, the subject a white woman in her fifties. Careful examination revealed no breast tumor, but the son of the patient, a physician, and the consulting surgeon thought the condition must be cancer of the breast. On section, again a pigmentless malignant neoplasm was observed which I believed to be melanoma. On uncovering the patient on the operating table there were revealed large numbers of black skin warts, several scaly, the primary seat of the axillary metastasis being apparently a small irritated one on the arm. These naevi had been present all of the patient's life.

Not many months ago a physician sent in a tiny black skin nodule with a note that the patient from whom it came, a young white man, had become covered by such nodules after a small pigmented mole had been burned with an electric needle. He could hardly believe that these could have come from such an insignificant source.

A white man, age 45, developed metastatic melanoma in the abdominal wall, the primary escaping discovery.

A middle aged white man noticed a pimple on the lobule of the ear about one month previous to consultation, and practically at the same time a lymph node below the ear enlarged, a metastatic melanoma practically simultaneous with the primary.

A white woman, age 40, had a liver colored mole on the leg all of her life, but a few months before she was examined another, pink in color, appeared near it, and two months previous to examination a nodule made its appearance in the popliteal space; this on removal proved to be a melanoma.

A white girl, age 18, noticed a small brown nodule in the skin of the thigh about a year ago; six weeks ago she burned it and it has increased in size and color since that time.

A white man, age 58, injured a "birthmark" on his chest in September. Two months later nodules began to appear over his body, and he died of generalized metastasis within seven months of the injury.

Study of the records of my department as well as of all places where such work is done will reveal case after case of the order of these here briefly recited.

Numerous references are to be found in

cancer literature where malignant melanoma, originating from an obscure, insignificant or even undiscovered parent focus has bloomed rapidly as multiple or inaccessible metastatic tumors. It is toward this habit and the additionally vicious tendency that melanoma has to resent meddling that I would direct attention.

The origin of this tumor is from certain pigment forming cells of the skin and eye. Normally these cells are concerned with protection from or utilization of sunlight. In the skin of the negro pigmentation is a function developed beyond that in light skins. It is interesting that the negro is free from the occurrence of tumors of this type in my experience. In this connection, it is said that melanoma occurs frequently in white horses but not in black, although this case is different from the human in that white horses, I believe, are black when foaled, there being a de-differentiation, as it were, in pigment producing cells as the animal matures.

Pigmented naevi are exceedingly common in the skin of white people as congenital collections of melanoblasts. They are potential sources of malignant melanoma. Just what type, if there is a particular form, which may become malignant I do not know. So far as I am aware any of them may. I am particularly suspicious of warty forms, or scaly one, or those which are in position to be irritated. In comparative number the occurrences of malignant neoplasm from them is small, of course, but the danger lies in the fact that the transformation may be abrupt and with little or no warning and the spread may occur so soon and to such an extent that it may be impossible to forestall their fatal progress.

Further, I know of no tumor which resents meddling in such a vicious manner. "Monkey-ing" with a colored mole in the skin, especially if it has shown signs of activity is pregnant with disaster. Half-way or prolonged measures of treatment, whether by knife, cautery, or ray, are to be severely condemned.

Serious attention to all such skin moles gives opportunity such as hardly occurs with any other class of such high grade neoplasms in the field of cancer prevention.

Potentially most, if not practically all, black cancers of the skin are preventable. Few are curable. When a mole should be treated is a

matter, of course, of judgment in the individual case. Certainly all of any particular significance, exhibiting any feature to call them to attention, should be treated.

When one is to be treated there should be no attack with any idea except complete removal or destruction at one treatment. Whatever method is used that must be the principle; if excision it must be complete, if by heat or ray it must be completely destructive at one application. Otherwise treatment not only does no good but generally does active harm in hastening progress of the condition.

Let the profession be on the look out for pigmented moles, let us warn people of their danger, let us be active against them. When they are treated let it not stop short of complete elimination of the focus. Many black cancers may thus be prevented.

#### DISCUSSION

Dr. J. Richard Allison, Columbia:

Doctor Lynch has brought to our attention a very important subject and pointed out some of the dangers connected with it. I think it necessary for every physician to be able to recognize these conditions on the skin, and to have some definite method of procedure as to treatment. There are several points that I should like to emphasize.

A typical blue-black melanotic mole is comparatively easy to diagnose. There are however, many kinds of moles that have varied amounts of melanin in them and therefore vary as to their potential malignancy. Then there are certain Keratoses and other lesions on the skin that may simulate melanotic conditions which do not contain the pigment melanin. Any one treating lesions of the skin should be well informed as to the characteristics and appearances of these various lesions.

To wait until a melanotic mole becomes irritated to be treated, is too late. The procedure is to decide on your line of treatment before any changes take place in the mole. There are three methods of removing moles. Surgery, x-ray and radium, and dessication. Surgery is favored by many. X-ray and radium by very few and I personally believe they should never be used. I believe the safest way to remove these moles is by dessication. An area around the mole is infiltrated with novocain and the mole thoroughly destroyed.

Dr. C. B. Epps, Sumter:

A few years ago I had a healthy young woman, twenty-three years old, who came to me with a hard lump on the right side of the upper abdomen. I

asked her about it carefully, and she told me that three months previously she had had someone burn out a little black mole about three inches from this area. Well, I decided right away that she was in a hopeless condition and explained it to all of her folks. I told them if they wanted me to I would excise it and send it off for examination, which I did. Dr. Bloodgood, of Baltimore, answered me right away and said: "You are dealing with an absolutely hopeless cancer, and she will be dead within twelve months." Now, she was perfectly healthy in every other way. In a few months she had hard tumors everywhere on her; she had them from her toes up. She lived about six months. I believe the logical way to treat moles, as Bloodgood says, is by free excision. Go wide out, to where you are in healthy tissue, or at least believe you are, and excise them. I believe very few men are competent to burn them out or cauterize them in any way. It stands to reason that free excision out to healthy tissue is better than burning when you do not know how far out that burning is extending. It seems to me common sense and science not to fool with them in any way or burn them but to make a free excision.

Dr. Arthur W. Browning, Elloree:

I saw a very good case of the condition, so beautifully described by Dr. Lynch. A young wife, the only daughter of a fine family of two children. She had a blue-black mold on right leg, just above ankle which she bruised and it became somewhat inflamed. She saw a physician, who treated it. Some months later she developed embarrassed breathing, shortness of breath on exertion. She consulted a physician, who told her she was getting too fat and advised diet and depletion. Later she noticed some enlargement of lymphatic glands in different locations. I saw her in office and noticed cyanosis of finger tips, lips, nose and ears with embarrassed breathing, and could palpate large tumor formations-glands all over body, and was told of the mole. I felt she was a seriously ill patient, had a consultant who agreed with me. I sent her to Dr. Pitts of Columbia for further diagnostic opinion and treatment. He confirmed our opinion of "malignant melanoma," gave her x-ray treatment, etc., but she died in three months. I got up principally to urge, as we have been urged so often, that we not temporize with such conditions but do what is proper, as has been stated by Dr. Lynch, to remove, get rid of them.

Dr. S. E. Harmon, Columbia:

Gentlemen, if you will permit a word from the chair, I wish to condemn in the strongest words the attempt on the part of anyone to treat the condition Dr. Lynch has just described by radium or x-ray. There is only one way in the world to remove those tumors, and that is either by cautery or knife, and be sure you get well beyond the diseased tissue.



## TREATMENT OF FRACTURED SKULLS

By

CHAS. O. BATES, M.D.,  
Greenville, S. C.

Before going into the subject of the Treatment of Fractured Skulls let us consider the relative importance of the injury in the present day trauma.

We find in 1906 in the Boston City Hospital 1436 skull fractures tabulated by Crandon and Wilson; 80 per cent of these due to falls from heights or kicks from horses. In 1926 McClure and Crawford tabulated 90,000 deaths due to accidents; 7.2 per cent were the results of skull fractures. A study in 1930 by Mock and Tower, taken from the statistics of the coroner of Cook County, showed 1649 accidental deaths; 35.5 per cent were due to skull fracture. The automobile was responsible for 49 per cent of these. Trauma next to heart disease causes a higher mortality and morbidity than any other cause.

Let us not consider the subject in the light of the textbook classification such as fractures of the vault and base, as simple or compound, as linear or depressed. I prefer to look upon the fractured skull not as a fractured bone, but just how much damage that trauma has produced in the brain and its blood vessels. The treatment of fractured skulls cannot be standardized because of the variability in the severity of the injuries. I feel that every case is a case unto itself. (1) However, there is one good axiom, "whenever a serious accident occurs, but results in apparently trivial head injury, consider that head injury as severe until proven otherwise."

## MANAGEMENT OF THE ACUTE HEAD INJURY

I use the term acute head injury because quite often in the emergency room you are unable at first to diagnose fracture. The diagnosis should be made by a careful bedside clinical study of the patient. Certainly the acute head case should not be subjected to an x-ray examination necessitating the taking of a number of films and from most trying positions. You will have to hold quite a few of these patients on the table. I feel that this is a critical tax on a seriously ill patient. May I add, let us not

allow a loving parent, an interested officer of the law, or a meddlesome neighbor to cause us to subject our acute traumatized head cases to an early unnecessary and sometimes valueless x-ray examination. The x-ray examination can be and should be done at a later and safer time.

All wounds of the head should be most carefully treated because of the danger of infection. A depressed fracture should be elevated, but never until life is safe or at least shock, to a certain degree, has been overcome. Our first thought should be to preserve life. The patient, if in a hospital, should be moved to a room and if shock will permit slightly elevate the head. An ice cap to head if it does not worry patient too much.

## BEDSIDE STUDY OF THE PATIENT

I believe more can be learned in the first few hours concerning the prognosis and after treatment of the patient than any other time. It is in this period of five or six hours that we have to try to determine if there is an extradural hemorrhage, for quite a few of the authorities feel that extradural hemorrhage is the only indication for an early operation. An important point in the diagnosis of the extradural hemorrhage is a "lucid interval" between the initial and subsequent loss of consciousness. The patient first is knocked out, but later gets up, walks around, then becomes unconscious. He has a dilated or fixed pupil on the same side as the hemorrhage. The patient may have a motor weakness or paralysis beginning in the face and extending to the arm and possibly leg. Convulsions may, also, follow with the same order—face, arm, and leg. This patient should have an immediate subtemporal decompression and a ligation of the middle meningeal or some of its branches.

## THE DIAGNOSIS OF INTRA CRANIAL PRESSURE

In fractured skulls intracranial pressure is always due to hemorrhage or edema. There are varying degrees of brain trauma causing intracranial pressure. Let us think of the head injury where there is no fracture demonstrable as a "black eye of the brain." We have seen the slight blow cause minute petechial hemorrhage around the eye. We have the same condition in the brain that gives us the picture of

\*Read before the South Carolina Medical Association, Florence, S. C., April 24, 1935.

concussion. The concussion cases clear up within a few hours or few days. In this type of case the only necessary treatment is rest.

In the more severe cases the physician or surgeon has to determine how fully nature is compensating for the increased intracranial pressure. We know that space compensation is the principal function of the cerebral spinal fluid. We have seen large tumors removed from the brain where this physiological compensation of cerebral spinal fluid has taken care of the patient as the tumor grew and done it so well the patient was practically symptomless.

It is watching the degree of compensation that is our job. We judge this by the following:

*The state of consciousness of the patient*, and this is most important of all data. The fact that the patient is unconscious means that the cerebral spinal fluid is not able to compensate for the pressure. The depth of the coma indicates the degree of seriousness of our patient.

*The restlessness of the patient*. Restlessness is a symptom that might tempt one to give large doses of morphine. This would be the same as masking the symptom in the acute abdomen.

*The rate and quality of pulse*. The pulse rate will remain slow and regular as long as the intracranial pressure is being compensated. A pulse very slow, say 40, or a pulse that is changing from 60 to 100 every few minutes means a losing battle for compensation.

*The respiration* remains slow and regular as long as there is compensation, but as compensation becomes broken, the respiration becomes rapid, shallow, and irregular. Cheyne-Stokes respiration indicates marked intracranial pressure.

*The change in temperature* is a valuable guide. A rectal temperature should be taken every thirty minutes. When the temperature remains under 102 degrees the pressure is being compensated; each degree above that means increasing danger. I have been unable to draw any satisfactory conclusion from blood pressure.

The eye ground examination is of importance but is of more importance after the first 24 hours.

#### THE TREATMENT OF INTRACRANIAL PRESSURE

A small percentage of cases are due to extra-

dural hemorrhage. The diagnosis being made and the pressure becoming severe, an operation is indicated and ligation of vessel. The large bulk of cases of intracranial pressure are due to other causes.

It is in this group that the authorities differ as to line of treatment.

I do not believe in too early and too frequent use of the lumbar puncture. I feel there are times when the pressure is extreme that it is a life saving measure and tides the patient over long enough to allow a decompression. The lumbar puncture should not be used to relieve pressure caused by subdural or extradural hemorrhage, because it is only by pressure that the hemorrhage is controlled.

I believe a hypertonic solution of glucose 50 per cent in 50 cc doses given at intervals is beneficial. It will reduce the pressure slowly, and at the same time you have the benefit of the nutrient value. In some of the long drawn out cases the nutrition must be taken care of even if through a tube.

Let me again say the greatest treatment for good in skull fractures with or without intracranial pressure is rest. You will have 60 to 70 per cent recoveries in serious fractures of skull from just rest alone. The cases that die within the first 6 hours, again eliminating the extradural hemorrhage, would not get well from any operation. In this type of case death is due to severe brain trauma. There will be a few cases where a well timed decompression done under local anesthesia is of advantage. Today the number of subtemporal decompressions has been reduced to a minimum. I think not over 10 per cent of the cases.

It is in the fracture with intracranial pressure that a most careful and persistent study should be made in any case. The changes in the patient's condition appear so quickly and the time for favorable action is so short that the patient's life, in a measure, depends on the quality of the physician.

By quality, I do not mean a specialist, but one using the best clinical judgment, dictated by common sense and acting on that judgment.

*The fracture proper*. You will notice I have not discussed the care of the fracture. Compound depressed fractures should be elevated as soon as the life of the patient would not be endangered, because it is in these fractures that



we have to consider meningitis and brain abscess. Meningitis will, as a rule, come on in two or three days; brain abscess later.

The simple depressed fracture should wait several days before operation. The pressure of a piece of bone on or into the brain does not cause any more pain. There is no sensation of pain in the brain substance. You can insert a rather large trocar into the brain without causing any pain.

*Fracture into middle ear and nose.* The ear and nose should be cleansed, but never use cleansing agent under pressure.

#### SUMMARY

1. Treatment of fractured skulls cannot be standardized or routinely treated.

2. The first and most important treatment is rest. No unnecessary moving of patient or taking of x-rays.

3. A clinical bedside study of the patient for the first five or six hours to observe and diagnose the degree of intracranial pressure.

4. The treatment of intracranial pressure by rest; hypertonic glucose and saline solutions

and possibly lumbar puncture and decompression.

5. *The care of the fracture bone.* The treatment should be secondary to treatment of brain and patient as a whole.

#### REFERENCES

(1) Harry Mock, Skull Fracture and Cerebral Injuries; International Journal of Medicine and Surgery, January 1931.

(2) Walter E. Dandy; Diagnosis and Treatment of Injuries to Head: A. M. A., Vol. 101, No. 10, September 2nd, 1933.

#### DISCUSSION

Dr. T. N. Dulin, Clover:

I do not wish to discuss Dr. Bates' paper at all, but I think it is one of the finest papers I have ever heard on that subject. I have been convinced for a number of years that shock kills many of these people. I have stated to my people that if I am ever injured in an automobile accident on the road or anywhere else I want them to warm me up and leave me where I am until shock is over. I think many accident victims are killed by being moved before they recover from shock. Shock kills if intensified by being moved any great distance.

## MINUTES

#### REPORT OF SECRETARY-TREASURER

South Carolina Medical Association

Dr. E. A. Hines, Seneca, S. C.

In the autumnal glow of twenty-five years service as your Secretary one is tempted to reminiscences, but they might invoke the opprobrium of the twice told tale. Such is not my purpose. It should not be amiss, however, to refer to a few epochs. A quarter of a century in medical history means little in looking backward for thousands of years, but there is ample evidence that since I have been your Secretary the special field of organized medicine has made more advances than in all the centuries preceding.

In this spectacular achievement the United States has led all other countries. The great reorganization of the American Medical Association in 1903-4 and 5 swept the country with great rapidity. The slogan was to enroll practically every medical man in the country. In South Carolina there were about 1500 doctors. Some 900 came into the organization. My predecessors builded well in that formative period, but when I became Secretary in 1910 the backwash of a hurried and extraordinary enthusiasm

was apparent. This is inevitable in every great movement. With the higher requirements of medical education the number of doctors slowly but surely decreased until today there are only 1329 physicians in South Carolina and the roll of the Association membership is little larger than it was twenty-five years ago. I believe that we have only a potential membership of one thousand as the outside limit and that would be a higher percentage than now obtains in any state.

We have grown in solidarity as an organization, and that is an important advance. The Secretary's office has become during the years a business office dealing with many problems outside of the realm of scientific medicine. Specialism has changed the aspect of the medical society to a marked degree in twenty-five years, and yet we are proud of our inheritance of conservatism in South Carolina. Allied societies and interests have grown up.

That the present organization is able to maintain its supremacy against the trend of so many diversified interests is indeed amazing, but the pendulum always swings back. Specialism has apparently reached its zenith and is on the decline. The medical

(Continued on page 136)

# THE JOURNAL

OF THE

## South Carolina Medical Association

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JULY, 1935

### THE POST GRADUATE OBSTETRIC COURSES BY DR. MCCORD A GREAT SUCCESS

For several months the State Medical Association cooperating with various county medical societies and the Children's Bureau of the United States have been putting on Obstetric Institutes with the view to reducing the maternal and infant mortality in South Carolina. Dr. J. R. McCord, Professor of Obstetrics of Emory University, at Atlanta, Georgia, has been conducting these institutes in a very able

and efficient manner. It is believed that before the season closes at least half of the doctors in South Carolina will have participated in this State wide program. The attendance has been unusually good and the wide territory from which these physicians come indicates an intense desire on the part of the profession of South Carolina to bring the State in line with the most advanced thought in the prevention of undue morbidity and mortality in obstetric practice. The following physicians have attended these courses:

#### *Obstetric Institute—Anderson, South Carolina*

April 15-19, 1935

Abbeville: Drs. D. S. Knox, F. L. Mabry, A. E. Poliakoff.

Anderson: Drs. D. J. Barton, Herbert Blake, Louis J. Bristow, G. W. Chambers, G. S. Clinkscales, Homer M. Daniel, E. E. Epting, J. Louis Gray, Samuel H. Haddock, H. Y. Harper, H. H. Harris, B. A. Henry, E. O. Hentz, J. N. Land, J. W. Martin, J. C. Milford, L. A. Nimmons, George T. Peel, H. A. Pruitt, Olga V. Pruitt, J. O. Sanders, A. L. Smethers, Wade Thompson, J. B. Townsend, Frank J. Wrenn.

Belton: Drs. L. R. Kirkpatrick, Wm. L. McIlwain, Joseph T. Marshall.

Calhoun Falls: Dr. J. V. Tate.

Clemson College: Dr. Lee W. Milford, Miss Janet Sikes, Miss Irene Julian.

Donald: Dr. B. H. Carlton.

Due West: Drs. M. Baldwin, W. L. Pressly.

Easley: Dr. L. R. Poole.

Fair Play: Dr. W. C. Mays.

Greenville: Drs. H. P. Bailey, Perry T. Bates, B. C. Bishop, Thomas Brockman, Robert A. Brown, Jr., Sylvester Cain, Jr., Thomas G. Goldsmith, Decherd Guess, C. A. Henderson, T. M. Northup, Jack D. Parker.

Greenwood: Drs. C. H. Blake, W. G. Bishop, R. M. Fuller, Dewitt L. Harper, J. C. Harper, J. D. Harrison, G. P. Neel, S. W. Page, C. J. Scurry, W. A. Simpson.

Honea Path: Drs. E. R. Donnalld, J. W. Haynie, D. C. Stoudenmire.

Liberty: Dr. W. A. Sheldon.

McCormick: Dr. C. H. Workman.

Ninety Six: Dr. George L. Kennedy.

Pendleton: Dr. W. E. Bickley, C. C. Horton.

Pickens: Dr. N. C. Brackett.

Seneca: Drs. E. A. Hines, J. E. Orr, S. H. Ross, Jr., J. N. Webb

Six Mile: Dr. D. E. Peek.

Slater: Dr. L. W. Wood.

Starr: Drs. Goodman Bare, George C. Pettigrew.

Travelers Rest: Dr. S. R. Gaston.

Walhalla: Drs. J. T. Davis, J. A. Johnson, B. J. Sloan.

Westminster: Drs. T. G. Hall, F. T. Simpson, Wm. A. Strickland.



Williamston: Drs. Wm. T. Lander, Frank Lander.  
 Hartwell, Georgia: Dr. B. C. Teasley.  
 Attendance, 88; number of communities in South Carolina, 25; 1 in Georgia.

*Obstetric Institute—Spartanburg, South Carolina*  
 June 24-28, 1935

Blacksburg: Dr. E. E. Strong.  
 Clifton: Dr. H. W. Koopman.  
 Converse: Dr. Paul M. Thompson.  
 Duncan: Dr. J. C. Moore.  
 Gaffney: Dr. J. P. Thomas.  
 Greer: Drs. R. C. Alverson, H. L. Brockman, M. L. Peeples, Jr.  
 Inman: Drs. C. J. Miller, George E. Thompson.  
 Lockhart: Dr. W. D. Hope.  
 Lyman: Dr. R. F. McKown.  
 Spartanburg: Drs. Sam Black, A. R. Fike, A. S. Gross, H. E. Heinitsh, Jr., J. H. Heming, W. B. Lancaster, J. J. Lindsay, H. E. Mason, R. E. Poole, F. H. Sanders, R. A. Way, O. C. Alford.  
 Union: Drs. Harold P. Hope, A. P. McElroy, F. P. Owings, F. P. Salley, Paul K. Switzer.  
 Woodruff: Dr. O. H. McCord.  
 Spartanburg: Drs. Cecil Rigby, W. W. Boyd.  
 Attendance, 32. Number of communities, 12.

OBSTETRIC INSTITUTE

Columbia, South Carolina  
 July 8-12, 1935

Aiken: Dr. J. R. Howell.  
 Batesburg: Drs. A. L. Ballenger, W. Wyman King, W. P. Timmerman.  
 Blaney: Dr. W. D. Grigsby.  
 Camden: Dr. S. F. Brasington.

Chapin: Dr. Robert M. Graham.  
 Chester: Dr. W. R. Wallace.  
 Columbia: Drs. E. W. Barron, Alfred F. Burnside, O. J. Champion, W. D. Chappelle, M. W. Cheatham, L. C. Davis, J. A. Dillard, H. R. Dove, Thomas M. Dubose, Jr., B. A. Everett, W. E. Fulmer, Jane B. Guignard, W. A. Hart, Charles M. Lide, C. K. Lindler, Clarence E. Owens, Frank C. Owens, Benjamin Rubinowitz, Robert E. Seibels, C. E. Stephenson, S. Watson Talbert, Edythe Welbourne.  
 Eastover: Dr. Garden C. Stuart.  
 Leesville: Drs. K. L. Able, James Crosson, D. S. Keisler.  
 Lexington: Drs. J. H. Mathias, G. F. Roberts.  
 Lugoff: Dr. J. W. A. Sanders.  
 Newberry: Drs. R. W. Houseal, T. H. Pope, T. W. Smith, J. K. Wecker.  
 North: Drs. James N. Fort, M. L. Nelson.  
 Pelion: Dr. A. T. Hutto.  
 Pinewood: Dr. Walter E. Whitley.  
 Pomaria: Dr. Z. T. Pinner.  
 Prosperity: Drs. John J. Dominick, George Y. Hunter.  
 Ridge Spring: Drs. P. A. Brunson, D. B. Frontis, Fletcher G. Asbill.  
 St. George: Dr. J. B. Johnston.  
 Saluda: Dr. J. D. Waters.  
 Sumter: Drs. J. J. Chandler, Carol B. Epps.  
 Wagener: Dr. M. W. Webb.  
 Whitmire: Dr. Hilland B. Thomas.  
 Winnsboro: Drs. John C. Buchanan, Jr., Amos C. Estes, Samuel Lindsey, C. S. McCants.  
 Augusta, Georgia: Drs. A. J. Kilpatrick, A. A. Walden.  
 Attendance—63.  
 Number of communities—24 (South Carolina), 1 (Georgia).

EDISTO MEDICAL SOCIETY

The Edisto Medical Society met Wednesday, June 6, 1935, at Dr. L. P. Thackston's country home, "River's Turn."

Dr. C. I. Green read a paper on the "Differential Diagnosis of Appendicitis, Salpingitis and Pyelitis," history of the case, location of pain, type of pain, temperature, urine, white blood count and the general appearance of the patient. The discussion was opened by Dr. C. A. Mobley and was followed by the following: Drs. H. J. Stucky, I. M. Stucky, Browning, Thackston, Shecut, Moore, Symmes, and Truluck.

Following a brief business session the meeting adjourned to a delightfully served fish stew and fry prepared by Dr. G. C. Bolin.

The following were present, Drs. H. P. Moore, C. A. Mobley, L. C. Shecut, T. M. Stuckey, H. J. Stuckey, G. M. Truluck, A. W.

Browning, L. Wells, J. W. Harter, T. M. Symmes, J. A. Forte, H. M. Eargle, C. S. Green, L. P. Thackston, G. C. Bolin and H. T. Schiffler.

H. M. Eargle, Sec. & Treas.  
 Edisto Medical Society.

MINUTES

(Continued from page 134)

schools are revising their curriculums looking toward the better training of the general practitioners. The fascination of quantity in our schools is giving way to quality in the selection of future doctors.

Here organized medicine has wielded an influence of incalculable value. We have at last become aware of such an entity as medical economics. It has always been with us, but we did little about it. It is in this period, then, that we find ourselves now, and solidarity of effort is our only hope.

Leadership is at a premium in the medical society of today. It is no time to bestow empty honors, for

(Continued on page 144)

## SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

### "DIAGNOSIS AND TREATMENT OF INJURIES OF THE HEAD"

In a special article in the J. A. M. A. September 2, 1933, Dr. Walter Dandy of Baltimore discusses the diagnosis and treatment of injuries of the head. He is directly opposed to a number of the practices commonly used. The subject is discussed so clearly and concisely that it is thought advisable to review the article in this column. The fact that it was published over a year ago does not impair its value as there has been no subsequent advance in our knowledge of this condition. The diagnosis will be considered in this issue while the treatment will be reserved for a subsequent one.

In evaluating injuries of the head it should be emphasized that alterations in the skull are of relatively minor concern. Of importance as regards life is the injury to the brain and its blood vessels. Accordingly X-ray examination should not be the first consideration as it gives very little information concerning this. Furthermore it is a serious tax upon a critically ill patient. It is of value particularly in disclosing depressed fractures—the one most important concern in the bone—but even here inspection and palpation are almost as satisfactory.

Lumbar puncture is advised against as being dangerous and offering little of value in diagnosis. While it will indicate the degree of intracranial pressure, it will not do so with more certainty than will careful studies of the patient. The dangers are the extension of an extradural or subdural haemorrhage which follows the temporary relief of pressure, and trauma to the brain of similar nature to that which occurs when lumbar puncture is done in the presence of increased pressure caused by a brain tumor. It is the author's contention that in the presence of increased pressure lumbar puncture invariably produces trauma to the brain, and that the apparent immediate benefit is soon followed by a deeper coma.

The main diagnostic consideration during the acute stage is how fully nature is compensating

for the increased intracranial pressure. Especially is it important to know when compensation is breaking, for it is at this stage that treatment, if indicated, is imperative. This clinical judgment is based upon consideration of (1) state of consciousness, (2) restlessness, (3) involuntary micturition or defecation, (4) the rate and quality of the pulse, (5) respiration and (6) the temperature.

Of these the state of consciousness is most important. A deepening state of coma indicates that the patient is becoming worse and the intracranial pressure increasing. Conversely an improving state of consciousness indicates that the patient is improving correspondingly. As a rule involuntary urination or defecation indicates an alarming state of increased intracranial pressure. Restlessness is a valuable sign of impending coma. Accordingly it should not be allayed with sedatives, as the picture will be masked.

The pulse remains slow and regular as long as the intracranial pressure is being compensated. It rises and becomes variable in rate and volume when compensation begins to break. Respirations likewise are slow and regular until compensation breaks when they become rapid, shallow and irregular. Irregular and Cheyne-Stokes respirations are evidence of an advanced stage of intracranial pressure.

The change in temperature is a sensitive indicator of the state of intracranial pressure. The rectal temperature should be taken every 15 to 20 minutes during the danger period. A temperature below 102 degrees indicates that compensation is taking place. Each degree above this signifies increasing danger.

Contrary to usual opinion, the author has found the blood pressure to be of little value.

In brief, clinical observation is the most informative and safest way of determining the condition of a patient suffering from a recent head injury. X-ray examination and lumbar puncture add little of diagnostic value and are often attended by danger to the patient.



## PATHOLOGICAL CONFERENCE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 286 (20056), March 8, 1935

*Service of Dr. Finger*

Student Cain (reading):

Negro male, 44 years, admitted 12-25-33, died 2-2-34.

History: Indefinite symptoms (headaches, dizziness, hot flushes, lumbar pains) for several years. In 1931 had a "sore stomach" and was given 4 injections of neoarsphenamine between July 1931 and his present admission. His blood was "4 plus" at that time. Seven weeks before admission his physician told him he had a swollen liver, and advised more injections. Has had dull aching pain in abdomen since that time, and possibly some fever. Hiccough developed 4 days before admission, continuous since, preventing sleep. Has vomited several times during last 4 days, but no hematemesis. Has had tarry stools several times lately, and patient thought this due to "666" that he was taking. Appetite good, bowels regular. For past year has taken  $\frac{1}{2}$ -1 pint of whiskey daily.

Physical: Temp. 101, pulse 120, resp. 26. B.P. 140-80. State of nutrition good. Examination normal except for the abdomen. The abdomen was very tense; very tender over upper abdomen, particularly between umbilicus and right costal margin. Liver palpable down to umbilicus, left lobe apparently more enlarged than the right.

Hospital Course. After 5 days of constant, low-grade fever, temp. became normal, remaining so until last 10 days, when it began to rise each P.M. to about 100, rising on the day of death to 103. Epigastric pain and burning continued; belching common. Hiccough improved. 1-15 Liver considerably enlarged since last examination, especially the right lobe. Liver harder, but not tender. On 1-27, the hiccough returned, associated with considerable vomiting, and with a dull pain across upper abdomen and lumbar region of back. Orthopnoea also developed. On 1-31, he became semi-comatose, remaining so until death.

Lab.: Blood Kolmer and Kline 4 plus, 3 plus. three urine exams. showed nothing ab-

normal except 4 plus albumin on the last exam. Blood Counts (12-26; 1-27) Hb. 68%, 49% (D); WBC 13,700, 8800; polys. 90%, 79%; lymphs 9%, 18%; monos 1%, 1%; eosinophiles 0, 1%. Feces showed nothing abnormal. 12-29 Van den Bergh, direct neg., delayed direct positive, quantitative 2.1 mgs. Repeated (1-4) direct neg., delayed direct positive, quantitative too low for determination; icterus index 12.6. 12-27 Amylase test 6,000 units. 12-27 day and night urines both contained urobilin 3 plus; urobilinogen neg. 12-29 Whole blood phosphatase 7.4 units, serum phosphorus 3.2 units. Blood Chemistry (12-25; 12-27): Urea N. 12 mgs, 14 mgs; sugar 125 mgs, 152 mgs. 12-26 Rose bengal liver function test 37% of normal. 1-23, blood fragility, hemolysis began at 0.38% NaCl, not complete at 0.28%. On 12-27, X-ray exam. of chest: "Negative except for slight widening of aorta."

Dr. Robert Wilson, Sr. (conducting): Mr. Zalin, will you open the discussion?

Student Zalin: The whole case impresses me as liver disease of some sort. The greater enlargement of one lobe, in the presence of a four plus Wassermann, makes it seem to me that the disease is a gumma of the liver. On the other hand, there are several symptoms pointing rather indefinitely to the stomach, as the "sore stomach" and the vague abdominal discomfort that has been present for some time, and the questionable tarry stools. These suggest the possibility of a primary carcinoma of the stomach with metastases to the liver.

The blood fragility test indicates that the liver enlargement cannot be that of hemolytic jaundice. The positive delayed direct Van den Bergh tests indicate direct damage to the liver cells rather than an obstructive lesion of the biliary system. The high blood count is a little suggestive of an abscess of the liver, but as nothing else points in that direction, I would tend to disregard it. I believe that the immediate cause of death was a toxemia.

Dr. Wilson: Mr. Assey, will you continue the discussion?

Student Assey: The liver is certainly the seat of the chief disease process in this case. The vomiting, cachexia, tarry stools and anemia suggest to me very strongly the possibility of carcinoma of the stomach, with liver metastases occurring before pyloric obstruction, and the liver metastases being the outstanding process. A diffuse syphilitic hepatitis, of the type thought to occur in secondary syphilis, is also highly possible. Abscess of the liver could give just such a picture, especially in view of the leukocytosis, but I am inclined to lean away from that diagnosis. Primary carcinoma of the liver must also be considered, but I believe that it would give a much more intense and increasing jaundice.

Dr. Wilson: Mr. Hayne (Isaac), have you something to add?

Student Hayne: I also believe that the long duration of the disease, with soreness in the epigastrium, slight jaundice, what is apparently a smooth enlargement of the liver, especially of the left lobe, in conjunction with a four plus Wassermann, point towards a syphilitic condition of the liver. While many of the symptoms do suggest carcinoma of the stomach in a vague way, I do not believe that malignancy of the stomach would last this long, while this would seem to be about the proper duration for a syphilitic disease of the liver. Syphilis usually gives a slight jaundice, with a long drawn out history of liver disease.

Dr. Wilson: How would you rule out primary carcinoma of the liver?

Student Hayne: Primary malignancy of the liver is a very rare tumor of the liver, while secondary malignancies are relatively common. So if I felt that the process was a malignant neoplasm, I would be inclined to call the liver changes secondary. If it were a malignancy of the stomach of this duration, I believe that there would be more cachexia, and therefore favor syphilis as a more likely disease. But I disagree with Mr. Assey that the jaundice of primary carcinoma of the liver is necessarily intense.

Dr. Wilson: Mr. Fouche?

Student Fouche: The gastro-intestinal symptoms impress me especially, and accordingly I believe that the case is one of primary carcinoma of the stomach with metastases to the liver. It is very hard to rule out syphilis of the liver, but

the liver enlargement would seem to be greater and coming on more rapidly than would be expected in syphilis. Too, there should have been improvement under anti-syphilitic treatment. Another thing to be considered is an early cirrhosis of the liver, due to the excessive alcohol that this man has apparently been taking. However, in the stage when the liver is very large, due to the fatty degeneration of the liver cells, it usually does not produce such severe symptoms, and the liver usually shrinks before death, while this liver has apparently continued to grow larger. Biliary cirrhosis usually occurs in younger individuals, and the jaundice is deep and persistent.

Dr. Wilson: How would you differentiate primary carcinoma of the liver from secondary carcinoma there?

Student Fouche: You can't do that until the primary source elsewhere is found. The possibility of the stomach being the primary seat of a cancer has not been ruled out in this case by x-ray or otherwise. The stomach is the commonest source for a secondary liver cancer.

Dr. Wilson: How about the fever and the Leukocytosis?

Student Fouche: I believe that there was an infection somewhere, but the examination does not give any pointers as to its location. There is no definite indication of abscess of the liver, amoebic or otherwise, and I would hesitate to make that diagnosis.

Dr. Wilson: Dr. Johnson, will you discuss the laboratory aspects of the case?

Dr. Johnson: There is no absolutely definite test to tell us the exact nature of the liver damage. The fact that the Van den Bergh test gives a positive delayed direct reaction, and not a positive immediate direct, indicates direct damage to the liver cells rather than an obstruction to the biliary passages. The quantitative Van den Bergh and the icterus index indicate that the jaundice is latent, that is, not clinically recognizable. The amylase test has its value in ruling out the possibility of pancreatic disease; here the test is within normal limits. The urobilin and the urobilinogen appear paradoxical in their relation to each other here, and this is doubtless due to some lapse in technique; the urobilinogen should be positive in the urine normally, and increased in any condition that



gives an increase in the urobilin. The phosphatase test indicates that the liver damage is not of an obstructive type, as in obstruction the test usually gives about 12 units. The fragility test shows that the liver enlargement is not that of hemolytic jaundice.

Dr. Wilson: If the diagnosis of cancer of the liver is made, the decision must always be reached as to whether the cancer is primary or secondary there. The latter is, of course much more common. It is my belief that this patient has not had liver enlargement very long, probably just a little over the seven weeks before admission, when it was first recognized. Primary carcinomas of the liver progress much more rapidly than secondary ones. The symptoms recorded here are certainly insufficient to make a diagnosis of carcinoma of the stomach. The fact that the chart is lacking in an x-ray of the stomach and a gastric analysis suggests that the internes and the visiting physicians had some good reason, probably not stated on the record, for not leaning towards the diagnosis of carcinoma of the stomach. I believe that this is a case of primary carcinoma of the liver, due to the relatively rapid enlargement of the liver, and the failure to find a primary source. Dr. Lynch will straighten out the difficulties in this case for us.

Dr. Lynch: While I was listening to this discussion, I have been trying to picture how syphilis could cause such a picture as we see here. There could be no such rapid enlargement of the liver as this with syphilis, and there would probably be little or no pain. Tertiary syphilis of the liver can occur in two forms. The gumma, which is apt to give a localized enlargement, would probably not cause liver failure; at least I have never seen it do so. The other type of tertiary syphilis of the liver, the "syphilitic cirrhosis," resulting from the healing of multiple gummata, would give a smaller and a shrinking liver, with portal cirrhosis effect, that is, with ascites. Therefore I do not believe that the diagnosis of syphilis of the liver could be justified in this case.

If you are thinking of a metastatic carcinoma of the liver, you would certainly expect to find some evidence of the primary growth, altho that is not always the case. The stomach cannot be incriminated definitely in this case, altho it

would seem that more studies should have been directed towards that organ with the idea of definitely ruling it out. Furthermore, primary carcinoma of the liver is not such a rare disease as we are frequently led to believe; at least that is not our experience here.

(Demonstrating autopsy specimen) This liver is the seat of a primary carcinoma of the diffuse type, arising from the liver cells. The other form, arising from the bile ducts, is the one that is commonly associated with a considerable degree of jaundice. The liver cell carcinoma, the "hepatoma," may occur either as a tumor widely scattered throughout the liver, with multiple nodules of relatively small size, or as a tumor more localized, developing one or more large nodules. This case is of the first type of hepatoma, the diffuse form, and some think that this arises from multiple foci, instead of from a single tumor with subsequent metastases.

Primary carcinoma of the liver apparently arises in many cases from livers that are already the seat of disease, as a "toxic cirrhosis," or a portal cirrhosis. In this individual case, the man's history of arsenical treatment could conceivably have given rise to a toxic cirrhosis. Or his alcoholic habits could have caused an alcoholic cirrhosis.

Jaundice in primary carcinoma of the liver will depend either on sufficient destruction of liver cells to give "toxic jaundice," or on obstruction of the bile ducts, with "obstructive jaundice." Primary carcinoma of the liver can possibly occur without any jaundice at all. Ascites also may or may not be present.

The frequent question that is heard in these conferences as to leukocytosis in cancer needs to be answered again. In all cases leucocytosis can be assigned to infection or to necrosis within the too-rapidly-growing tumor when seen at autopsy, and there is no reason to assume some other vague or unreasonable explanation. In this case there was considerable necrosis of the tumor proper, with a suspicion of infection there, altho the liver is usually well protected from infection.

(Micro-projection apparatus) you see here the islands of cancer cells, large, active and numerous, and bearing a rather definite morphological similarity to liver cords. They tend

to be arranged in groups, separated from each other by fibrous tissue in which can be seen a few compressed liver cells. The appearance of this collapsed tissue, with its contained liver cells, suggests very much the appearance of the liver of so-called "healed acute yellow atrophy," or "toxic cirrhosis," and in this case I believe that there is such a background.

This other slide shows tumor emboli in the arteries of the lung and gives an excellent demonstration of how pulmonary metastases take

place. You see here the active tumor cells, exactly similar to those we saw in the liver, encased in the branches of the pulmonary arteries. These walls are swollen and distended, but there is as yet no actual invasion; this is to be anticipated however, and it is by such direct growth into the walls and peripheral extension that tumor metastases are usually established in the lungs. There is also, as you can see here, an early bronchopneumonia.

## BOOK REVIEWS

THE MEDICAL CLINICS OF NORTH AMERICA, November, 1934, Philadelphia and London, W. B. Saunders Company.

There are a large number of valuable articles in this volume of importance to the general practitioner. One, in particular, is worthy of mention, The Clinic of Dr. Harlow Brooks of Bellevue Hospital, The Failing Heart: Its Recognition and Management. He makes a very significant statement difficult at times to remember. "In our treatment of the failing heart, we must above all else treat the patient as a whole and as an individual, for it is the whole person that is sick, not just the heart, and not alone the body, but the mind of the human, also; each case must be considered as a personality, as well as a mechanism, out of order." Drug therapy is still an important matter, however, in the management of heart failure in the opinion of the author. Among them adrenalin, caffeine, atropine, strychnine very rarely, digitalis of course. He makes an interesting remark about this drug. "Digitalis is so remarkably effective in very many cases of chronic heart failure that it not only relieves the patient but also actually cures many cases of malignant therapeutic nihilism. Morphine is imperative at times. He even gives calomel credit for being of value in certain cases. Alcohol is of some help at times. The bromides and chloral hydrate have a place though very old drugs they are. There are, of course, many other measures and drugs mentioned but in the main the author pleads for simplicity in the treatment of the failing heart.

SYNOPSIS OF PEDIATRICS, by John Zahorsky, A.B., M.D., F.A.C.P., Prof. of Pediatrics, St. Louis University Medical School. Fabrikoid. Price \$4.00. Pp. 359, with 77 illustrations and 6 color plates. St. Louis. C. V. Mosby Company, 1934.

It is not surprising that so excellent a clinician as Dr. Zahorsky, nor that one who has had so much experience in pediatrics, should be able in

a small volume of 60 compact chapters to cover the field. The work is of course concise and extremely practical, there being little space allotted to vague theories or abstractions. However, without in any way attempting to compete with the large works or systems, it is sufficiently comprehensive.

If the medical student or the general practitioner is fortunate enough to get into his head most of its contents, it will be very well for his little patients.

The paper is excellent, and the type clear. The heavy black type headings of the paragraphs and the full index permit quick reference.

Doctor Zahorsky and the publishers should be well pleased with their offspring.

R. M. Pollitzer, M.D., F.A.A.P.

SURGICAL CLINICS OF NORTH AMERICA:

Issued serially, one number every other month. Volume 15, Number 3. Chicago Number—June 1935. 239 pages with 119 illustrations. Per clinic year February 1935 to December 1935. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1935.

There has been a marked change in policy in the publication of the clinics. The effort now will be to present in a very practical way write ups of clinics bearing directly on the daily work of the busy practitioner. This volume is evidence of the new idea. There is an admirable symposium on fractures as follows:

Kellogg Speed: Fracture of Head of the Fibula With Involvement of Peroneal Nerve; Delayed Radial Palsy.

David C. Strauss: Treatment of Fractures of the Femur in Children, with Special Reference to Russell Traction.

Hugh McKenna: Fractures of the Neck of the Femur; Fracture of Left Humerus; Comminuted Fracture Involving the Middle Third of the Right



Tibia and Fracture of the Left Fibula in the Same Position.

Frederick Christopher: Fracture-Dislocation of the Right Carpus; Smith-Petersen Operation for Ununited Fracture of the Neck of the Femur.

John D. Ellis: Fractures of the Sternum.

**METHODS OF TREATMENT**, By Logan Clendenning, M.D., Clinical Professor of Medicine, Medical Department of the University of Kansas; Attending Physician, Kansas City General Hospital; Physician to St. Luke's Hospital, Kansas City, Missouri.

With Chapters on Special Subjects by H. C. Anderson, M.D.; Ursulla Brunner, R.N.; J. B. Cowherd, M.D.; Paul Gempel, M.D.; H. P. Kulm, M.D.; Carl O. Rickter, M.D.; F. C. Neff, M.D.; E. H. Skinner, M.D.; E. R. DeWeese, M.D.; and O. R. Withers, M.D.

Fifth Edition, St. Louis, The C. V. Mosby Company, 1935.

This author is a gifted writer on most subjects and his presentation of practical methods of treatment herein described should prove helpful to the busy doctor. More than two hundred pages are devoted to drugs, one fourth of the book in fact. After all we have not yet reached the era of complete nihilism of such therapeutic resources however attractive the theory may be. A considerable section has been devoted to dietetics in the treatment of disease. This, too, is a good idea if not carried too far. Diet fads have done more harm than good. A creditable section is devoted to allergy but there are many other therapeutics suggestions in the book.

**A TEXTBOOK OF BIOCHEMISTRY**: Edited by Benjamin Harrow, Ph.D., Associate Professor of Chemistry, The City College, College of the City of New York and Carl P. Sherwin, M.D., Sc.D., Dr.P.H., LL.D. Member of the Staff of St. Vincent's Hospital and French Hospital, New York City. 797 pages with 52 illustrations. Philadelphia and London: W. B. Saunders Company, 1935. Cloth, \$6.00 net.

This is an unusually important contribution. There are some thirty contributors representing many of the best laboratories of the world. Biochemistry has had such a spectacular period of development that the author found it necessary to seek the cooperation of many other men in the writing of the book.

**PHYSICAL DIAGNOSIS**, by Warren P. Elmer, B.S., M.D., Associate Professor of Clinical Medicine, Washington University School of Medicine; Assistant Physician to Barnes Hospital; Physician-in-Charge, Missouri Pacific Hospital; Consulting Physician to Jewish Hospital; Consulting Physician to Jewish Hospital, St. Louis, and St. Louis County Hospital, and W. D. Rose M.D.,

late Associate Professor of Medicine in the University of Arkansas, Little Rock, Arkansas.

Seventh Edition, St. Louis, The C. V. Mosby Company, 1935.

This is the seventh edition of this book. New matter has been added on aortic murmurs, silicosis, and diagnostic methods. The section on electrocardiography has been completely revised. There are many excellent illustrations.

**1,000 QUESTIONS AND ANSWERS ON T. B.**, by Fred H. Heise, M.D., Medical Director Trudeau Sanatorium and Question Box Editor of Journal of the Outdoor Life.

A ready reference book for the tuberculosis patient, his family, and his friends. Published by Journal of the Outdoor Life, 50 West 50th Street, New York City.

This is a very valuable little book, authoritative in scope, with the following contents:

1. Heredity.
2. Predisposition.
3. Infection.
4. Immunity.
5. Relapse.
6. Symptoms.
7. Diagnosis.
8. Terms and Definitions.
9. Classification.
10. Cavity.
11. Treatment.
12. Surgical Treatment.
13. Laboratory Aids.
14. Bronchoscopy.
15. Associated Diseases.
16. Extrapulmonary Tuberculosis.

**THE CRIPPLED AND THE DISABLED**, Rehabilitation of the Physically Handicapped in the United States, by Henry H. Kessler, New York: Morningside Heights, Columbia University Press, 1935.

Fitting physically handicapped persons into the social and economic structure has become a major problem of modern machine civilization. Dr. Kessler's study, coming as it does in the midst of a great experiment in economic and social adjustment, brings this vital matter forcefully to the attention of the socially minded.

The popular belief that all disabled persons constitute a sheer economic waste is ably refuted. Physical limitations they may have, but, the author contends, the handicapped can be rehabilitated so as to become useful, self-supporting and responsible members of the community.

The policies and methods necessary to aid rehabilitation are therefore the key to the problem. The re-education of the community in its attitude towards this unfortunate group must be joined with legislative measures, Dr. Kessler holds. Legislation both more adequate and more uniform is

needed, so that all types of handicapped may be assisted by state or federal agencies set up to adjust these individuals to the occupations best suited to their specific disability.

The book contains a detailed study of disabled persons classified according to type: the child cripple, the military, industrial and chronic disabled, and the blind, deaf and dumb. There is also a most comprehensive critical evaluation of the laws pertaining to the subject. These together form the basis of a book which has much of solid value in it for students of politics, sociology, medicine and economics. The author is medical director of the New Jersey Rehabilitation Commission.

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HUMAN ANATOMY, Double Dissection Method, by Dudley J. Morton, Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University.

First Dissection, New York: Morningside Heights, Columbia University Press.

Human Anatomy, Double Dissection Method, by Dudley J. Morton, Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University.

Second Dissection, New York: Morningside Heights, Columbia University Press, 1934.

Many medical schools, it appears, have been forced to encompass the study of anatomy in about one year. These requirements have necessitated marked changes in the methods of teaching in some of these schools, notably, the College of Physicians and Surgeons of Columbia University. These books have been written with a view to this newer plan. Some of the newer features of which are as follows:

1. Two dissections of the entire body, the first being restricted to the larger structures and visceral organs, and the second applying chiefly to the vascular and nervous systems with a review of the larger structures.

2. Arrangement of students in pairs (four to a table), the laboratory work being alternated equally between dissection and study of exposed structures.

3. Dissection restricted to a corresponding area on each side of the cadaver, and following a regional sequence.

4. Coordination of lectures with laboratory assignments, thereby avoiding discussion of structures with which the students are unfamiliar.

5. Use of specific directions for dissection and study in order to obtain maximum results within a limited period of time.

6. Dependence on mental receptivity of the students rather than on the didactic efforts of the teachers.

7. Periodic tests to enable students, as well as their teachers, to measure their accomplishments and progress.

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THE DOCTOR'S BILL, by Hugh Cabot, with an introduction by A. Lawrence Lowell, New York: Morningside Heights, Columbia University Press.

The author has covered a wide field in the study of both the economic and scientific problems of medicine. The practice of medicine in many other countries as well as the United States has been touched upon more or less extensively. The present trends in the United States inspire considerable comment. A multitude of plans for providing people with doctors and hospital service have been brought under review. With one of the greatest group institutions in the world, the Mayo Clinic, naturally inclines him to favor some such type of practice for this country. At best the book offers no panacea or way out for the care and treatment of all the sick people of the United States. It should prove helpful, however, as a study in one volume of economic conditions in medicine and direct those so inclined toward more extensive investigations. The title of this book has been well chosen since it is a publication for both the doctor and his patient. The movement now gaining ground rapidly to provide a course on economics in every medical school has much to commend it. While the author points out some inherent weaknesses of medical organizations to provide the necessary leadership in economic problems it is not likely that any other plan will offer so much encouragement. It would be foolish to surrender this leadership to the layman though of course the author does not advocate this but there are people who do and the profession should continue to make a bold stand against this and such a stand can best be made by organized medicine.



## MINUTES

(Continued from page 136)

the call is urgent even to the smallest county medical society.

The record of the State Medical Association for the past year along all lines has been encouraging. The membership has increased—the total paid up members numbering 689 with an accredited enrollment by the American Medical Association of 895.

The finances of the Association and Journal improved, and a reserve fund is being accumulated again.

The Association has always been interested in the reduction of the maternal and infant mortality in South Carolina, but on April 15 at Anderson inaugurated a post graduate obstetrical institute by Dr. J. R. McCord, Professor of Obstetrics at Emory University, Atlanta, Georgia, who represents the Children's Bureau of the United States. These lectures will be given in various parts of the State during the year.

As one result of the enthusiasm engendered it was decided by the nearly one hundred doctors attending the Post Graduate Institute at Anderson to enlarge the idea of a post graduate course to include other branches of medicine beginning in the late summer or fall, and if possible to stimulate similar ventures in other parts of the State. This idea is now fostered by State Medical Associations all over the country, thus bringing post graduate instruction to the doctor who is often unable to leave his practice and go to the medical centers for this purpose. I am profoundly grateful for the cooperation of the medical profession of South Carolina for these twenty five years of loyalty and support.

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Laryngoscope, 1935, XLV, 149-154★

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Proc. Soc. Exp. Biol. and Med., 1934, 32, 241-245★



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# THE JOURNAL

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### THE PEDIATRICIAN LOOKS AT THE TONSIL

By

R. M. POLLITZER, M.D.,  
Greenville, S. C.

In this brief paper an attempt will be made to present for your consideration, the present day conception of many pediatricians, and particularly those of the S. C. Pediatric Society, concerning the tonsil, and its relation to the child. Of course as an exponent of a group it is an easy matter to differ in unessentials, or perhaps be a bit too radical. So I must beg your and their indulgence, should I utter what you may regard as heresy. Nevertheless I trust that in the main, I shall succeed in giving to you what they have in mind.

However before stating our position, it would not be amiss to express what I think is the common view-point of others. By so doing you may note certain differences which should be illuminating and perhaps of interest. The average mother for instance, having heard about tonsillectomies from her friends, rather expects that some doctor, sooner or later will demand this sacrifice. As a rule, she is not surprised and quite often, even makes the suggestion. The father considers the whole matter as just another fad, and an excellent way for the doctor to get more revenue.

The anatomist tells us that there are three kinds of tonsils, and that the faucial tonsil is an encapsulated, ductless gland, having many crypts, and being rich in blood vessels. Its size is very variable, but its position fixed. The physiologist admits his ignorance of the function of the tonsil, no one having yet discovered an internal secretion; but he is of the opinion

that within the crypts, the normal tonsil in some way destroys bacteria which have entered. The pathologist confirms this, but adds that often in consequence of disease or injury, the tonsil can no longer kill these germs, and ceases to be a protective organ. Analogously to a diseased appendix, thyroid, or gall-bladder it becomes a menace. "It has been shown by Davis, Tongs, and many others that the tonsils harbor the streptococcus hemolyticus in 90 per cent of all cases demanding removal." (Griffith & Mitchell, p. 540).

The average doctor or perhaps the doctor who is below the average, commonly in groping about for some cause of malnutrition, loss of appetite, enuresis, epilepsy or what-not, suggests that the tonsils should be removed.

As a rule he is really anxious to render some service, but a complete physical examination is time consuming. A blood study or other more refined tests, as a basal metabolic rate, or radiographic examination, etc., etc., cost money. The mother only too often is over-anxious to find a short cut to the child's health. She wants something done now. So the doctor then and there says "The tonsils must come out."

I have heard it stated, that the chief indication for a tonsillectomy is the presence of the tonsils. Also it is often argued that inasmuch as the tonsils may be the basis for ill-health, it's only right to remove them and see whether improvement does not follow. This of course does not constitute the best type of practice; for its nothing more nor less than guess work, at the expense of the patient. It would be a misstatement to say that no tonsils should be removed, and just as great an error to advise the removal of all tonsils. The thing that each and all of us should realize is that there is today amongst us, not enough judgment or discrimination used in the condemnation of tonsils. Not



very many doctors are mercenary, though some of course place the fee far ahead of the patient's welfare. Nor do all laryngologists advise tonsillectomy in every child. But a considerable number of them weakly yield to the importunities of the family doctor who is referring the patient. That is they do not assert themselves for fear of losing the good-will of the doctor, or at times operate on his say so, hoping that he knows best. This acquiescence is often a grievous mistake. Of course the same failing is found in other specialties too, but at this moment they are not under discussion.

Having talked to you about mistakes and bad practice, it's now high time to outline what the pediatrician thinks of the tonsil. The subject is pretty well settled in our minds and we believe that certain fundamentals are firmly established. There are several things about children and their tonsils that should be clearly understood. To begin with there are but two common conditions of prime importance, though of course there are many others such as Vincent's Infection, Diphtheria, Scarlet Fever, etc., etc., which time will not permit of inclusion herein.

These two are follicular or lacunar tonsillitis and hypertrophy or hyperplasia of the tonsils.

Tonsillitis is extremely common at all ages, but especially so in childhood. Contrary to most text-books, in my experience it has not been rare during infancy. Exposure to cold and to wet, and particularly long automobile trips are factors. Contagion has a part. Undoubtedly some children are predisposed. The attack begins with chilliness and malaise. Often, indeed as a rule, there is vomiting, and fairly often diarrhea. That is, there is a systemic toxemia, which early affects the child's gastrointestinal system. The cervical lymph nodes may be somewhat enlarged, but this is not constant. At times there is abdominal pain, which often leads to a mistake in diagnosis. Pain on swallowing may be present, but is variable with the individual and the degree or type of infection. History here is of little importance; for children will not admit having a sore-throat for fear of the examination, which they greatly dread. Nothing can take the place of a proper

throat examination, made with a tongue depressor, in a good light, while the patient is firmly held. A blanket or sheet may be necessary. A poor examination is worse than none. As a rule the tonsils when involved are swollen, deep red, and generally have a few or many whitish or yellowish soft spots or plaques irregularly placed on its surface, or protruding from the crypts. At times these are large and seem to merge. The temperature generally is elevated, ranging from 101 to 105. The disease lasts about a week. Albumin in the urine is not uncommon, and blood microscopically is not rare. Occasionally acute nephritis develops. However the average doctor does not do a urinalysis in all his patients who have tonsillitis. Nevertheless F. D. Murphy (Med. Clinics of N. Amer., March 1935) says that "No longer can scarlet fever be looked upon as the chief cause of acute glomerular nephritis. Investigation by many shows that tonsillitis, the common cold and sore throat outstrip it as the chief etiologic factors."

Not uncommonly a soft cardiac murmur is heard. This generally disappears. However endocarditis or valvulitis, may date from one or several such attacks. Several instances of this have come under my observation. The diagnosis is purely an anatomical one. Most often a culture is not necessary, but at times absolutely essential, for the exclusion of diphtheria, etc. In my practice which has dealt with infants and children exclusively for a good many years, the finding of tonsillitis in infants between seven months and one year, has been extremely frequent. I am refraining from saying almost daily. Nearly always the diagnosis of teething or some digestive upset has been made by the mother. At times the infant is referred by a doctor because of the vomiting or diarrhea, with the request that he or she be put on a suitable diet. The diagnosis of tonsillitis, in my opinion is missed oftener by the doctor and the mother, than any other with the possible exception of otitis media. Where there is vomiting or diarrhea, and even with abdominal pain not infrequently calomel or castor oil has already been given.

Tonsillitis is of course very common in older children, too. They may complain of sore throat, and of being sick all over, but history can not always be relied on, even then.

There is no question but that repeated attacks of tonsillitis seriously injure the tonsil, and are a menace to the child's health. Further it is probably the chief factor in hypertrophy of the tonsil. Diet we know is also of importance in lessening resistance to attacks. Mention has already been made, that removal of the tonsils is a very frequent procedure. But it is surprising to learn according to Collins and Sydenstricker, that of all the surgical operations in the cities of the U. S. 1/3 are for removal of the tonsils and adenoids. Before hastily expressing condemnation of this high operative figure, let us briefly review the major indications and contra-indications to this surgical procedure.

In brief, it may be said that diseased or obstructive tonsils, not merely large tonsils (other things being favorable) should be removed. This of course is a generality, and needs a bit of explanation. First when is the tonsil diseased? "Repeated attacks of tonsillitis, increasing in severity, with or without systemic disturbance indicate disease." "Next, repeated attacks of tonsillitis with systemic manifestation, where the focus can not be otherwise located, should make one suspicious of the tonsil." However there is no evidence to support the common practice of removal of tonsils for a susceptibility to head colds, frequent sore throat, croup or asthma. Asthma is often thereby aggravated. "Further, continuous or prolonged enlargement of the anterior cervical lymph nodes, with repeated attacks of tonsillitis, and without any other demonstrable cause mean tonsillar disease." Mere enlargement or prominence without disturbance of breathing, without glandular enlargement, and no history of disease is a contraindication to removal.

However tonsils large enough to be obstructive to breathing, and especially the adenoids, should be removed. Where an infant has had several attacks of otitis media, an adenoidectomy must be done. There is no reason why one must operate on both tonsils and adenoids. Little ones if possible should retain their tonsils for several years. Whether the tonsils or the adenoids or both should be removed, requires more than a hasty glance. The pros and cons in each case should be weighed. However as a guide, Griffith and Mitchell in their text-book list the following as indications for surgery—"Several

attacks of tonsillitis, not lessening in severity; one attack of peritonsillar abscess, several attacks of otitis, and otherwise unexplained nephritis, arthritis, pyelitis, or marked respiratory obstruction."

Kaiser of Rochester, N. Y. in a study based on 20,000 tonsillectomized children and 28,000 children who still had their tonsils, concluded that the tonsil is a factor in the causation of rheumatic fever, scarlet fever and chronic heart disease. However removal of tonsils influences unfavorably the incidence of the following:—bronchitis, pneumonia and sinusitis.

In a later study based on 4,400 control children, he found that nephritis occurred only one third as often, in children whose tonsils had been enucleated. Also dental infection was noted in only half as many who had no tonsils. However there was practically no difference in the incidence of malnutrition, nor in that of tuberculosis. This is striking, because most men operate because of malnutrition.

Granting then, that some tonsils should be removed, when and at what age should this be done? The operation should not be done during an acute illness, or attack of tonsillitis, nor until at least two weeks have elapsed. The best season is that time of the year when we are free from cold weather, from much rain or strong winds; for the little patient is going to be more exposed to these for several weeks, and sinus involvement is not an uncommon sequel. However if it be imperative, weather and age must be waived. Where the child is being seriously damaged or delay is considered dangerous, the tonsils may be removed even during the first year. But where it is advisable three years is the minimum age for tonsillectomy. As it is very rarely necessary to operate on a certain fixed day, where the patient is anemic or otherwise in poor condition, one should attempt by diet, drugs, or transfusion to fortify the child.

It is almost criminal to enter on this type of surgery without previously having had a urinalysis. I have known of two children who died in diabetic coma, because the urine was not examined prior to the anesthetic. Further there have been some deaths from hemorrhage, which might have been prevented. It is inexcusable to operate without first determining the clotting



time. Cases of leukemia have had their tonsils removed, and then soon after had that diagnosis made. In brief we might say that before doing a tonsillectomy, the minimum requirements are:—a careful history, a thorough physical examination of the whole child, along with a urinalysis and a blood-study. This last includes a leucocyte count, a differential count, a hemoglobin estimation, and test for coagulability. Other procedures or methods of investigation may be helpful, but these are prerequisite. The question of thymic hyperplasia is purposely being avoided. The operation while simple is not infrequently done by untrained men or for one reason or another in poor fashion. Rhoads and Dick found in examining 403 patients that in 73 per cent small pieces of tonsillar tissue had been left. These are potential sources of danger. Needless to remark the anaesthetic and the anaesthetist are very important factors in the case. After a tonsillectomy for several days, say three at least, the patient should be kept in bed, and for several weeks after that, he should be carefully protected from undue exposure, and guarded from acute infections. Parents should be warned that improvement will not be evident within a few days, perhaps not for several months.

Nor should they be led to expect the cure of idiocy, epilepsy, enuresis, and many other chronic ills. But in general the child having been carefully studied; where the operation is indicated then properly done under a satisfactory and safe anaesthetic; in the vast majority of instances, marked improvement is brought about.

Therefore while thoroughly and most heartily deprecating the number of unnecessary and thoughtless tonsillectomies that are being done every day, yet nothing in this paper should be construed or is intended as a condemnation of the operation when indicated and done by skilled men.

#### DISCUSSION

Dr. D. L. Smith, Spartanburg:

We do not expect to settle this question of the tonsils, by any means, but I wish you all could have been present at the meeting of the South Carolina Pediatric Association and heard the discussion led by Dr. Mitchell, of Memphis, Tennessee, in February.

There were a small group of pediatricians and a few of the otolaryngologists present, and we took up this tonsil question. It was upon my motion, after a discussion of two and a half or three hours, that Dr. Pollitzer was elected to appear before you today with this paper, and I think he has covered the subject most excellently from our point of view. I feel sure that you are going to have several views on the subject today, and I think the discussion will be well worth while.

The first thing that I want to bring out or accentuate or impress upon you is the thorough physical examination of the child before the removal of tonsils. I think the thorough physical examination of all children before the removal of tonsils is a very necessary thing. Frequently the tonsils are condemned when the child has other defects, the correction of which would relieve the child and the tonsils would not have to be removed. In teaching and in my own work I feel that the tonsils should be the last thing that we examine in the child. We should make a thorough physical examination of the child before we ever look at the tonsils, so as not to have that influence on our mind in the physical examination of the child.

Then I think that no child should have the tonsils removed on one examination of the tonsils. Frequently we might change our minds if we were to see that child two weeks later.

The next point I want to emphasize is that we are guilty, frequently, of indiscriminate removal of tonsils on only the recommendation of the school nurse. The school nurse goes around and looks at the tonsils and condemns them, the parents are thoroughly educated, and the tonsils are removed. That is being done in South Carolina and done frequently.

I am happy to say that the otolaryngologists are cooperating in South Carolina and are having more physical examinations done now than in former years. Five years ago and ten years ago and many even today are removing the tonsils without the thorough physical checking up that we feel is necessary.

I think the tonsil has a definite mission in the body. If possible, it is very desirable that the child retain his tonsils until the second year, or the first year, at least, of school life. If it is possible to carry that child through with his tonsils until the second year, or the first year of school life, where he comes into contact with school diseases, it is very desirable.

I disagree with Dr. Pollitzer that repeated attacks of acute tonsillitis are always an indication for removal of the tonsils. I have seen so many children who have had their tonsils removed because of repeated acute upper respiratory infections, and those children have these acute respiratory infections right on. The removal of the tonsils does not prevent that.

We look for thorough discussion of this paper today, and, if permitted, I should like to answer some of the discussions.

Dr. C. L. Kibler, Columbia:

I wish I, as a laryngologist, could write as good a paper as the pediatrician has written, or could write a paper on pyelitis or some of the other childhood diseases and be as versatile as Dr. Pollitzer. He has written a very valuable paper, filled with splendid advice and timely warnings.

I shall have to take issue with Dr. Smith when he says that in children who have had repeated attacks of tonsillitis there is no indication that those tonsils should be removed. As we know, acute tonsillitis is a serious disease, not only among children but among old people. Old people are subject to acute tonsillitis, with the temperature running to 103 to 105, just as children. We know it is often the forerunner of an acute rheumatic condition or of a heart complication. That being the case, why not remove the tonsils in these children who have had several attacks of acute tonsillitis as a preventative of an endocarditis or other serious complications? It looks to me like a sensible thing to do.

It has always been controversial when to remove tonsils, especially in children. It matters not how old or young a child may be, whether one year old or ten years old, if there is a specific reason for the tonsils to be removed, after having had a thorough physical examination and eliminated everything else and know the tonsils are a focus of infection, then I think they should be removed.

The baby specialists have gone into this subject thoroughly, and there is not much left for the otolaryngologist. They can do much of the work just as well, such as a myringotomy or adenoidectomy as the laryngologist. And the optometrists have taken over a large part of the eye work. If the baby specialists will just let us continue to remove tonsils we shall be grateful. However, the pediatricians play an important role as to diagnosis, and we must rely on them in a great measure as to proper treatment, operative or otherwise.

I have a good point to make. I have a sign that indicates to me when the tonsils are infected and should be removed, and it has stood me in good stead. I do not know whether I got it from the literature or from experience. That is, when you look into the throat, it matters not whether it is a small tonsil or a large tonsil, whether it is imbedded or not, whether it has crypts from which you can squeeze out debris, pus, etc. it matters not. But if you have a red line running all the way down on the external pillar, the tonsil is diseased. It is evidence of deep infection, and I would unhesitatingly say, remove them.

Dr. E. W. Carpenter, Greenville:

The baby, when it comes into the world, is very much like the Eskimo; that is, it has never been in contact with civilization. The Eskimo that has never been in contact with civilization, if landed in New York City, will likely die of pneumonia or tuberculosis. They have never been immunized. In talking

about the tonsils, we often lose sight of the fact that they are only a part of the lymphatic ring, which is a mass of lymphatic tissue composed of several units.

There is no use to talk about tonsils, tonsils, tonsils when you have much more involved than the tonsils. You have an enormous area in Waldeyer's ring for the entry of organisms. I believe the entrance of organisms through these portals is beneficent, because this stimulates immunity. The baby could not live unless more or less immunity were established. It requires a different immunity for organisms in different parts of the world, so there is no autocratic set-up as to when you should remove the tonsils. If the baby does not respond, if the child's antibodies do not form and the child is being overwhelmed with a toxemia or a blood-stream infection, remove the source. Surgeons take out the appendix for catarrhal appendicitis; they do not wait for a catastrophe; they do not wait for it to rupture. There is no hard and fast rule as to when to take out the tonsils or when to take out the adenoids; it takes a good doctor, using horse sense, to know when to operate and when not to. You may send a baby home today with innocent-looking tonsils and say "Watch this baby," and in two weeks it has nephritis. If the nephritis is controlled in a reasonable time you remove the tonsils; if the nephritis is progressive you also remove them.

Dr. J. W. Jervey, Jr., Greenville:

I want to thank Dr. Pollitzer. He has covered this subject completely, and I find myself in almost complete accord with what he has said and what others have said here today. I do, however, feel it incumbent upon me to rise at this time in defense of my own specialty of otolaryngology. It would seem, from the implications, that we have been rather remiss in the preparation of our patients; and I want to try to make you feel what I most earnestly feel—that there is a vast difference in the work in tonsillectomy and adenoidectomy that is being done by the first-class otolaryngologist and the same type of work that is being attempted by almost anyone who during his hospital internship has seen or done a tonsillectomy. No one can tell me that a man with insufficient training can remove a pair of tonsils cleanly and adequately and go into the nasal pharynx and remove an adenoid completely, cleanly, and not dangerously. No one can do that who has not had considerable experience. Even those of us who are doing this work all the time and who have had special training find it at times exceedingly difficult, and it is my earnest belief that a good deal of the criticism that has come upon tonsil and adenoid operations is the result of poor work and the vast majority of it by men who are not capable of doing good work. There is a tendency for the pediatrician to enter this field; why I do not know. I shall not attempt to say; I leave it to your own judgment.

I do not believe most of us operate because of



malnutrition. And I do not believe that the otolaryngologist in South Carolina is today removing tonsils upon the advice of the school nurse.

I was glad to hear Dr. Pollitzer mention the automobile. I think some five years ago, here upon this floor, I mentioned that as one of the worst evils of the present age. I do believe that the automobile, for children, is one of the worst of modern inventions.

There is one thing I should like to say I do consider as a contraindication for tonsillectomy, and that is, as Dr. Carpenter mentioned, hypertrophy of the lymphatic tissue in the lymphoid ring. When I see hypertrophy of all that tissue I do not believe that tonsillectomy will accomplish the desired result.

Dr. M. R. Mobley, Florence:

I wish also to express my appreciation to Dr. Pollitzer for this report. The longer one is privileged to practice medicine, the more he should be impressed that the doctor is in a position of trust; and the doctor who would lightly betray this trust for any reason except the well-being of his patient to me is reprehensible. The unfortunate thing about this operation of tonsillectomy and adenoidectomy is that it has fallen into disrepute. It has unfortunately been placed in the ten-, twenty-, and thirty-cent store scale. It has unfortunately been done by many otolaryngologists of incompetent training and not infrequently by men who have had no training. So it is not wonderful that it has fallen into disrepute.

Most of you gentlemen have children; most of you are fathers. Let's bring this thing home to ourselves. If your little girl comes home from school with a note saying her tonsils should come out, do you telephone to an otolaryngologist and say: "I want you to take my child's tonsils out"? No; you take that child to an otolaryngologist who you feel has good judgment and who you feel will go into that case thoroughly. Gentlemen, it requires a good deal of judgment, I think, to tell when a tonsil should come out and when it should stay in. The tonsil, as Dr. Carpenter has said to you, is one of the chief immunizing organs of the body. A child coming into this world needs all the immunizing forces he can get, and anyone who advises removal of that tonsil needlessly is thoughtlessly jeopardizing the life of that child. But when that tonsil becomes so infected that it acts as a focus of infection from which bacteria can be disseminated to the various organs of the body, then is the time to remove that tonsil, and not until then.

I think every case should be looked into very carefully. Sit down and talk to the mother of that child. Find out just what that child's symptoms are. After going into the case very thoroughly, finding out whether the child has frequent respiratory infections, frequent flare-ups of temperature, earache, "growing pains", as the mother calls them, then, at the same time, making very pleasant overtures to the child, assuring it that you are no bear, taking it into your lap, talking to it, then you can very easily get

a thorough examination; but if you fly at that child with a tongue depressor by the time it enters your office, then the examination you get is going to be largely a hit-and-miss matter.

I feel that under no circumstances should tonsils be removed unless there is a very definite indication for it. But when that indication has been established, regardless of that patient's age, I think if it is a positive indication the tonsils should be removed. Would you take a ten-months-old girl baby who is suffering from a severe attack of pyelitis and say that, because of that girl's age, you will not remove the tonsils? Determine the indications, and then, regardless of the age, if there are positive indications remove the tonsils.

Dr. H. L. Timmons, Columbia:

I think this discussion is unfortunate, as the public might think there is a great controversy here between the pediatrician and the laryngologist. This is not true. The pediatrician is working for the good of his patient, just as the laryngologist is doing. They want things done that will help the children; we want things done that will help the children, or the patients. We are trying to come to a conclusion as to when tonsils should be removed.

I have great respect for the man reading this paper. I think we have no better pediatrician in the State, and I do not want the men to go back home thinking Dr. Pollitzer said no tonsils should be removed. He does not mean that, I know. There are two points he has made to which I agree in every respect. That is close and careful physical examination and examination of the urine and blood. The other is as to the age. Statistics show, as he has given, that if a child's adenoids and tonsils be removed at too early an age the child is more susceptible to bronchitis and pneumonia. But what are you going to do with a child that has had repeated attacks of tonsillitis? Are you going to see that child and say it has tonsillitis and swab out the child's throat, and in thirty to sixty days you go back, and the child has another attack of tonsillitis? You think you possibly might have a specialist see the child and see if the tonsils need removing, but you postpone it. Two or three months later the child has another attack; then you find a heart lesion. Gentlemen, is that the kind of medicine we want to practice? No! Many a child has developed a valve lesion because of the infection traveling to the heart. It takes a competent man to look at tonsils and tell whether they should be removed. Just because the tonsils are red and the throat is red all over, that does not mean a tonsillectomy. There are definite signs and symptoms, and to know these symptoms you have to have had training. Just as I would send a child with scarlet fever to the pediatrician, so I would send a child with tonsils to the otolaryngologist.

Dr. Pollitzer, Closing Discussion:

First of all I wish to thank each and all of you

who have so kindly discussed this paper, and the others for their very patient attention. The subject is one that is in some respects highly debatable, and I am not the least surprised that some points of difference have been brought out. On the contrary, it seems to me remarkable that on the whole there should be so much unanimity.

Dr. E. W. Carpenter's remarks about immunity are very true. Dr. J. W. Jervy, Jr., has emphasized very properly the difference between the work done by trained and untrained men. Dr. D. L. Smith in deploring the hasty work done by tonsil clinics and public health workers is eminently correct. I beg to differ from one of the discussors in fearing the effects of this paper if reported by newspapers. In fact it seems that the profession and particularly the nose and throat man will gain rather than lose if the public is informed.

And so, I wish to close by repeating for the sake of the press my last paragraph:—

"Therefore while thoroughly and most heartily deprecating the number of unnecessary and thoughtless tonsillectomies that are being done every day, yet nothing in this paper should be construed or is intended as a condemnation of the operation when indicated and done by a skilled man."

## DIFFERENTIAL DIAGNOSIS OF BRIGHTS DISEASE

By

JAMES A. BRADLEY, M.D.,  
Florence, S. C.

Bright's Disease is defined by Dorland(1) as "any one of a group of kidney diseases attended by albuminuria."

In the present paper we will omit those rarer renal conditions such as abscesses, cysts, new growths, etc., and confine ourselves to the disease as it presents a general involvement of the parenchyma of both kidneys.

Due to the numerous vagaries of a clinical classification as advocated by Christian(2) and to Browning's(3) suggestion of a functional classification; we favor the pathological type of classification advocated by Volhard and Fahr(4), Van Slyke(5), Addis and Oliver(6) and numerous other authors.

### 1. HEMORRHAGIC BRIGHTS DISEASE (Glomerulo Nephritis)

- a. Acute
- b. Subacute
- c. Chronic

### d. Terminal

### 2. NON HEMORRHAGIC BRIGHTS DISEASE

#### A. Arteriolosclerotic Brights Disease

#### B. Degenerated Brights Disease (Tubular Nephritis and Nephrosis).

In accepting this classification one must bear in mind that rarely do we have one portion of the renal unit affected without the other parts becoming involved. Therefore our diagnostic terms indicate only the portion showing the major damage.

Before discussing these various conditions, let us remember that the renal unit begins with an afferent vessel breaking suddenly into a capillary bunch, the glomerulus, which is separated from the exterior of the body only by a microscopical thin membrane forming Bowman's capsule. These capillaries join together to form the efferent vessel which passes on to the proximal convoluted tubules.

As the urine passes from Bowman's capsule it, generally speaking, passes through the proximal convoluted tubule, the descending and ascending limbs of Henle, the distal convoluted tubules, and on into the collecting tubules and renal pelvis. The blood vessels, of course, come from the renal arcuate arteries and veins.

A physiological consideration of this anatomical arrangement aids in the understanding of why a disease involving the glomerules would show red blood cells in the urine, and a disease of the arteries or arterioles would lead to hypertension. Also, in view of the part the tubules play in the albumin secretion, or excretion, we would expect a disease of this portion to show excess albuminuria.

For simplification of differential diagnosis we may omit many of the clinical symptoms with which we are all familiar and consider the following as:

### 1. DIAGNOSTIC DATA NEEDED

#### A. Hematuria

Indicates glomerular involvement

#### B. Albuminuria

Indicates Tubular involvement

#### C. Edema

Indicates Tubular involvement

Edema increases with the loss of proteins from the blood in the form of albuminuria. Lepore(7) considers the edema in a hypoproteinemic as a



sodium chloride edema which is increased with sodium chloride and fluid intake.

D. Hypertension

Indicates roughly the amount of vascular involvement.

E. Microscopic findings of red blood cells, casts, etc., in the urine.

2. DESIRABLE DATA

A. Mosenthal Test

B. Concentration or Dilution Tests

C. Phenolsulphonephthalein Test (P. S. P.) (9).

D. Blood Urea Clearance(12)(13)

E. Blood Creatinine Clearance(8)

F. Blood Plasma Proteins(13).

1. HEMORRHAGIC BRIGHTS DISEASE

The chief *significant points* of Glomerular or Hemorrhagic Brights Disease are a local, focal, or general infection of streptococcic origin, with profuse, chronic, or intermittent hematuria, moderate hypertension with blood pressure not over 170 systolic, and in the acute or advanced stage nitrogen retention. The *albuminuria* and edema vary with the amount of associated tubular damage. *Urinary* casts of the hyaline, granular, epithelial and blood varieties may be found in all stages with a broad renal failure cast present in the terminal stage.

The *usual course* is usually one of an acute onset which may terminate fatally or pass through the subacute and chronic to the terminal stage. The *end results* are either cure or death from terminal nephritis.

The *autopsy* findings are a small or large granular, white kidney showing on microscopic examination marked glomerular destruction of both the intra and extra capillary type. There is a varying degree of destruction of the tubules as well as of the arteries and arterioles.

2. NON HEMORRHAGIC BRIGHTS DISEASE

We have two types of Non Hemorrhagic Brights Disease. (A) Arteriosclerotic or Arteriolosclerotic Brights Disease and (B) Tubular or Degenerative Brights Disease.

While the exact *etiology* of the Arteriolosclerotic type is unknown, we must consider all infections, endocrine, or metabolic diseases, and endogenous or exogenous intoxications as the probable cause.

The chief *significant points* are a marked

hypertension, with a blood pressure of 150 to 200 or more systolic, which usually precedes any serious signs of renal diseases. There is little or no edema or albuminuria of renal origin, though there may be some due to cardiac failure. The microscopic *urine* shows no red blood cells, but usually some casts, chiefly of the hyaline variety.

The *Usual Course* presents an insidious onset with subsequent nocturia, cardiac edema (when present) and marked hypertension, which may be benign, or if associated with glomerulonephritis it may be of a malignant character. The *end results* are death from uremia, cardiac failure, or apoplexy.

The *autopsy* findings reveal a deeply scarred, small, granular, red kidney which on microscopic study presents a varying degree of damage characterized by endarteritis and hyperplasia of the intima with contracted lumina, resulting in a varying degree of necrosis and fatty degeneration.

B. Degenerative Brights Disease

The third type of renal lesion or the second Non Hemorrhagic type for our consideration is that group termed Degenerative Brights Disease by Addis(6) or Nephrosis by Vollhard and Fahr(4).

This type of kidney disease is *usually due to* toxins of an infectious, endogenous, exogenous, or cachexic origin being excreted or secreted through the tubules which show the predominant damages in this case.

The usual infectious toxins are the result of chronic diseases as tuberculosis, syphilis, chronic suppurative or focal processes, or to all contagious diseases as measles, diphtheria, etc. The endogenous intoxications are chiefly pregnancy or jaundice, while the exogenous intoxications may be a prolonged high protein diet(10), metallic poisons as mercury, or medicinal renal irritants as turpentine, cantharidin, carbolic acid, etc. Of the cachexic toxins, malignant tumors are the main offenders.

The chief *significant points* are marked edema and marked albuminuria without hematuria or hypertension, except in the case of pregnancy, when McCann(11) considers hypertension a prominent symptom.

The *urine findings* show a marked amount of albumin with no red blood cells, but with casts

chiefly of the hyaline type, and a few of the fatty, granular, epithelial and waxy varieties, while there are broad renal failure casts in the terminal uremic stage. In addition to casts, on microscopic examination we frequently find characteristic double refracting globules.

The *usual course* is an acute or insidious onset with the subsequent symptoms as noted, e.g., marked edema and albuminuria without hypertension.

The *terminal results* are either cure or death from an intercurrent infection or from uremia.

The *autopsy* findings show grossly a large, soft, white or bile stained kidney, with microscopic evidence of markedly degenerated tubules and varying amount of amyloid or hyaline degeneration of the glomeruli. In the amyloid degeneration the arteriolar walls are infiltrated with amyloid material.

We have purposely omitted reference to the diagnostic value of the data desirable for diagnosis, as those tests such as Mosenthal concentration and dilution tests, and the phenolsulphonephthalein test, are widely understood, and other data as blood urea or creatinine clearance and blood plasma proteins are not easily available for the general practitioner.

#### RESUME

1. Hematuria and moderate hypertension indicate glomerular damage.
2. Marked hypertension with no red blood cells and only a small amount of albumin indicates renal arteriole damage.
3. Marked albuminuria and marked edema without hypertension indicate tubular damage.

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#### DISCUSSION

Dr. J. H. Cannon, Charleston:

I think Dr. Bradley has given us an excellent presentation of the picture commonly spoken of as Bright's disease. Particularly commendable, it seems to me, is the fact that he has emphasized the correlation of the clinical picture based on the damage done in the kidney. I think that can not be emphasized too much. He has pictured for us the recognition of these conditions where (if one can imagine, and we see it sometimes) the picture is clear-cut, as it would look to be from his paper, although he called to our attention that it is rarely the case. We have a picture in our mind that the lesion from which the patient is suffering has not damaged any single portion of the kidney but is more or less a diffuse nephritis. Therefore the picture is bound to be obscure; rarely is there a purely glomerular lesion or a purely tubular damage. In addition to that, when there is added cardiac failure, we have other factors that confuse the picture. In cases where ordinarily we would have only a trace of albumin, we now have quite a quantity of albumin and casts, with hypertension. It is my experience that always with these patients it tends to be spoken of as nephritis, regardless how much or how little may have been known of the patient previously, because of the fact that at the time the patient comes under observation there is heart failure, edema dependent upon the heart failure, with marked hypertension, and this condition is always spoken of as Bright's disease; whereas hypertension with passive congestion of the kidney is the more correct description.

I am particularly interested in hearing the paper today by Dr. Stander on nephritis in pregnancy. Not infrequently we are called in the City Hospital to see cases on the obstetrical service, cases with heart failure and associated renal damage. Here, again, we have an additional factor in these cases to complicate the situation. Just how shall they be classified (and there are various classifications there) in an attempt to make the picture a little clearer? I think the classification by (the name has slipped me for the moment), at the Mayo Clinic, is very practical. He feels that the vast majority of the kidney lesions, or lesions found during pregnancy, can be classified according to Volhard and Fahr, with the super-added strain of the pregnancy; and that seems to hold good so far as I have been able to determine. So often those cases have a story of previous damage,



damage in a previous pregnancy, a history of hypertension, which gives us a hook on which to hang the diagnosis.

I have certainly enjoyed the doctor's paper very much.

Dr. Wm. R. Barron, Columbia:

I want to bring out two points in this that are quite enlightening to me. In estimating kidney function, using the phenolsulphonephthalein test, there are some types of nephritis which will show a hypersecretion of phenolsulphonethalein. We may be misled by this.

The other type of nephritis is the type in which most of these symptoms the Doctor has mentioned and most of these findings, will be absent, and the phenolsulphonethalein test will give us possibly the only clue to the amount of nephritis we are dealing with. I had an internist ask me to cystoscope an old lady because he found a few pus cells in her urine. I went ahead and did it, but I would not have done it had I known what a low 'phthalein she had. Fortunately, it did no damage; I used small catheters, he had no blood-pressure symptoms, no urinary findings, nothing else in the world to indicate that she had an advanced nephritis except a low phenolsulphonephthalein.

Dr. James J. Ravenel, Charleston:

I am not qualified to discuss this except from the standpoint of the phenolsulphonephthalein. A patient who is constipated may, on the first functional test, give a very low reading. Disorder of the liver, any hepatic congestion, will for some unknown reason hold the 'phthalein, so that there will be a delayed excretion. The ideal way to run a phenolsulphonephthalein test is to run what is known as the fractional test: collect the first specimen in thirty minutes, then the succeeding specimens collect at twenty minute intervals until six specimens are collected in all. By this means we can determine whether or not the maximum excretion is early or late. If the peak is reached in the first or second specimen the kidneys are capable of concentrating early: if the peak is not reached until the fourth or fifth specimen the kidneys have lost the power of early concentration, therefore they show damage even though the sum total of dye excreted may be within normal limits. Early concentration means better renal function even though the total elimination is at the lower normal limit.

Dr. F. B. Johnson, Charleston:

I am glad that Dr. Bradley emphasized some of the simpler procedures that may be used in the diagnosis of this condition. There are many complicated procedures carried on, not so much for diagnosis but for information as to the extent of the disease and for prognosis.

We have come to lay great stress on one test, the urea-clearance test. While there are a great many cases of fairly advanced conditions which may show a normal urea, and in which the phenolphthalein test is of doubtful value, we have found that the urea-clearance test is of great help. It is not only of value in following up the prognosis, of the case—but is particularly of value in the early diagnosis. It has been shown by Van Slyke and others that the urea clearance test will show up loss of kidney function much earlier than any other test we have. This comparison of the figures on the blood and the urine urea has proven of much value. Of course, when we get the other, more advanced symptoms—high urea, etc.—it is hardly necessary to carry out this test, but in the earlier cases it is of much value.

One of the simpler tests that can be carried out by anyone is the specific gravity. The fixation of specific gravity gives information of great value—as also does the comparison of the day amount of urine to the night amount.

Dr. Bradley, closing the discussion:

I am very glad to have heard the various tests brought out and the correct interpretation mentioned. I purposely left them out because I know that a busy practitioner does not have time, frequently, in the average case to run the phenolsulphonephthalein and certainly not the blood-urea clearance or the blood-plasma proteins or the blood-creatinin-clearance test, which are somewhat complicated except for laboratory men. The Mosenthal test I think is a very good one. That is collecting the urine at various times of the day when you have the patient drink water at meals and no other time.

I was interested in the case Doctor Barron spoke about, in which he said there was no sign of nephritis at any time except the low phenolsulphonephthalein. Frequently we have a tendency to forget the patient's past history and what we can gain in the present condition by a knowledge of it. That applies in nephritis just as in anything else.

## - ANDERSON, THE ELECTRIC CITY -



Airplane View of the City

Anderson needs no introduction to the Southeast. The name is synonymous with good roads, model schools, rich soil, record production, diversified crops, hydro-electric development and textile manufacturing.

### *Location and Population*

Located in the famous Piedmont section or at the foothills of the Blue Ridge Mountains and bordering the Savannah River, Anderson County has long had the distinction of being not only one of the most progressive counties in South Carolina but the entire South. The County has a population of 80,949 according to the 1930 Federal Census, 72 per cent. of whom are white and 99 1-2 per cent. are American born. The City of Anderson is directly in the center of a great agricultural county with a radiating system of hard-surfaced roads equal to any in the country. The agricultural resources of Anderson County are supplemented by eighteen textile manufacturing plants, a large number of which are operated by hydro-electric power developed within the county.

### *Hydro-Electric Development and Public Utilities*

More than 35 years ago Anderson was given the name of "The Electric City", due to the fact that she was the first town in the South to have an unlimited supply of Hydro-Electric power available for every purpose. It has been largely due to this cheap and reliable power that Anderson had developed into such a large industrial center.

### *The Anderson County Hospital*

The Clinical Assembly is fortunate in having one of the outstanding hospitals of the State for its meetings. The new Nurses' Home has a large auditorium with modern facilities for teaching.

### *Hotel Facilities*

Anderson has a number of good hotels but the John C. Calhoun Hotel will be Headquarters. The rates are reasonable and the service excellent.





Scene at the Country Club



Overlooking the Square

*Anderson College*

Anderson is the home of Anderson College, South Carolina's first fully organized Junior College, whose spirited parentage is traceable to one of the first institutions ever established for the higher education of women in the United States, the Johnson Female Seminary, opened in the village of Anderson in 1884.

*A City of Homes*

Anderson is a City of home owners and beautiful homes. A recent survey shows that approximately 82 per cent of the population of the City of Anderson live in their own homes. Anderson has two strong and active Building and Loan Associations which have been responsible in a measure for the large growth of the city and the large number of home owners.

*Recreation Centers*

The Electric City Country Club which is located one mile from the City limits of Anderson, has a splendid golf course, tennis courts, swimming pool and all facilities provided by any modern Country Club. Within a nice motoring distance from the City are located two beautiful lakes where one may enjoy swimming, dancing and picnics.

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PROGRAM PIEDMONT POST GRADUATE  
CLINICAL ASSEMBLY, ANDERSON, S. C.  
SEPT. 3, 4, 5, 1935

Tuesday, September 3—3 to 6 P.M.

Preventive Pediatrics.

Dr. W. A. Mulherin

Professor of Pediatrics, Medical Department  
University of Georgia. Dean of the Southern  
Pediatric Seminar.

Infantile Paralysis,

Dr. R. M. Pollitzer, Greenville, S. C.,

Formerly Professor of Pediatrics, Medical Col-  
lege of the State of South Carolina. Member of  
Faculty, Southern Pediatric Seminar.

Everyday Pediatrics. Infant Feeding. Diarrheas,

Dr. D. L. Smith, Spartanburg, S. C. and Saluda,  
N. C.,

Registrar and Member of the Faculty Southern  
Pediatric Seminar

Wednesday, September 4—3 to 6 P.M.

Joint meeting with the South Carolina Division,  
Southeastern Surgical Congress.

Recent Progress in the Care of Hip Fractures.

Dr. J. Warren White, Greenville, S. C.,

Surgeon in Chief, Shriners' Hospital for Crip-  
pled Children.

Suppurative Pericarditis

Dr. George H. Bunch, Columbia, S. C.,

Cancer of the Colon,

Dr. A. Johnson Buist, Charleston, S. C.,

Professor of Gynecology and Abdominal Surgery  
Medical College of the State of South Carolina.

Thursday, September 5—3 to 6 P.M.

Practical Points in the Diagnosis and Treatment of  
Heart Disease,

Dr. J. H. Cannon, Charleston, S. C.,

Assistant Professor of Medicine, Medical College  
of the State of South Carolina.

The Pathology of Some of the More Common Car-  
diac Lesions Seen in General Practice,

Dr. Kenneth M. Lynch, Charleston, S. C.,

Professor of Pathology, Medical College of the  
State of South Carolina.

The Differential Diagnosis of Chronic Digestive  
Disorders,

Dr. A. I. Josey, Columbia, S. C.

Formerly Instructor in Medicine University of  
Rochester School of Medicine.

Wednesday Evening, September 4.

Joint Meeting of the Clinical Assembly with the  
Anderson County Medical Society.

Address:

The Medical College of the State of South Carolina,  
By Dr. Kenneth M. Lynch, Professor of Path-  
ology, Charleston, S. C.

Information—

The Anderson County Hospital will be the center  
for the Clinical Sessions of the Assembly.

The John C. Calhoun Hotel will be Headquarters.



# THE JOURNAL

## OF THE

### South Carolina Medical Association

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AUGUST, 1935

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#### THE PIEDMONT POST GRADUATE CLINICAL ASSEMBLY

North Carolina was one of the first states to provide post graduate instruction for the doctor in his home community. The first course in that state was given under the auspices of the State University cooperating with the medical profession. The first lecturers were professors from Boston and Chicago. These men were professors in two of the great medical schools

of the country and pediatrics was the first branch of medicine to be taught. The success was so marked that since that time the idea has spread throughout the country until nearly all the branches of medicine are represented in the course of instruction taken to the doctor in the field. In our own state the Medical College of the State of South Carolina has been very sympathetic with every effort the State Medical Association has made along post graduate lines. A few years ago the College put on a most excellent post graduate course which for a time had a spectacular attendance. It has appeared, however, necessary to enlarge the old idea that the doctor must for brief periods visit the great medical centers in pursuit of graduate training. This, of course, is often necessary but only a few of the more fortunate members of the profession are able to avail themselves of it. Not until the entire profession has the advantage of some form of extension graduate instruction will the highest type of practitioner be possible. In view of this fact and as a result of the Obstetric Institutes now being conducted in this State by Dr. J. R. McCord, Professor of Obstetrics at Emory University, Atlanta, Georgia, in cooperation with the State Medical Association and the Children's Bureau of the United States, the Piedmont Post Graduate Clinical Assembly has come into being. The enthusiasm engendered at the first Obstetric Institute in Anderson, April 15 to 19, 1935, called for an immediate organization looking to providing instruction in other branches of medicine. A definite organization was launched with the following officers:

Dr. E. A. Hines, President, Seneca, S. C.

Dr. Jack Parker, Vice President, Greenville, S. C.

Dr. A. L. Smethers, Secretary-Treasurer, Anderson, S. C.

A steering committee was appointed and certain policies outlined. It was decided to hold the initial clinical assembly at Anderson, September 3, 4, 5, 1935. For the first assembly it was agreed to emphasize Pediatrics and Internal Medicine. The steering committee invited the South Carolina Division of the Southeastern Surgical Congress, Dr. J. R. Young of Anderson, Chairman, to participate jointly in the program.

The faculty has now been assembled representing some of the finest teachers of medicine and surgery in this country. It is desired and urged that every doctor in South Carolina who can possibly do so spend the three days in attendance upon this post graduate course. It is hoped that every officer of the State Medical Association, the members of the State Board of Health, the members of the State Board of Medical Examiners and the officers of constituent County and District Societies be present. This convergent movement of the medical profession toward Anderson with the first hand information sure to come of it should lead to a much greater trend in this State in the interest of graduate medical education. This is now a problem of organized medicine and not of the medical schools alone.

In this connection we wish to quote in full the leading editorial in the *New England Journal of Medicine*, Boston, Mass., August 15, 1935.

#### "CONTINUING MEDICAL EDUCATION"

Under this suggestive caption\*, the Vice-President in Charge of University Relations, University of Michigan, describes Michigan's Postgraduate Program for keeping practitioners up to date in their knowledge of the science and of the art of medicine. The problem is stated in a quotation from Osler: "The family doctor, the essential factor in the battle, should be carefully nurtured by our schools and carefully guarded by the public." The responsibility of the public is generally lost sight of, but the participation of the schools has always been regarded as necessary. It is here that the teachers must chiefly be sought and found, but the form and degree of participation have varied in the numerous experiments made in many states. Osler was writing on the "Educational Value of Medical Societies," and it is to the state society

that the general practitioner must look for the chief means for solution of the problem, with which he is by himself helpless to deal.

All of these experiments in "continuing medical education" are worthy of close scrutiny and study, for the physician should be a student all his life, but among the growing group the Michigan experiment especially deserves attention. The details need not be specified now: naturally they might be different in Michigan with a state university from what would be appropriate in Massachusetts.

The efforts of the Massachusetts Medical Society have met with encouraging response, but the opportunities have been merely touched. The hands of those responsible for the rather modest program should be upheld, and they should be encouraged by suggestion and helpful criticism.

The possible results of a wise program carried out over a period of years are very great. Already as Dr. Bruce says of Michigan: "There has been a decided improvement in the morale of the medical profession of the state and evidence of a helpful cooperative attitude of one physician to another stimulated by the class room contacts. In addition there has developed a teaching talent in many well-informed practitioners and specialists which hitherto has not had opportunity to express itself. But possibly more important than all, the standards of social responsibility of the profession have gone forward, as well as those of medical practice, with the evidence of a renewed confidence on the part of the people."

If these results may reasonably be expected, the movement deserves the support of every member of the medical profession and especially of every member of the state society.

\*Continuing Medical Education: James D. Bruce, M.D. *The American Scholar*, Vol. 4. No. 2. Spring 1935.



## OBSTETRICS AND GYNECOLOGY

J. D. GUESS, M.D., GREENVILLE, S. C.

### INSTRUCTION IN OBSTETRICAL NURSING

Twenty of the one hundred young women who took the examination in obstetrics-gynecology at the June examinations for registration of nurses in South Carolina made grades below sixty per cent. These twenty young nurses were graduates of training schools for nurses, operated in connection with hospitals in the state. The examination was not unduly difficult and was not unduly theoretical in its scope. The grading of the poorer papers was rather lenient and of the better papers rather strict, and yet there were many excellent grades made, and several were better than 95 per cent.

These facts demand thoughtful consideration on the part of those interested in nursing education, and bring up three questions.

Were these twenty girls sufficiently educationally prepared to undertake the course in nursing? They had certificates or diplomas indicating that they had completed two years or more of a high school course. However, there was very little indication of more than a most elementary sort of education in most of their papers. They could not spell even simple non-technical words, they knew nothing of sentence or of paragraph structure, and many of them showed an inability to understand even simple questions. There was nothing to indicate that these young women had been entitled to their certificates of education. There was every indication that they were too poorly prepared to acquire the technical knowledge upon which the practical work in nursing schools is based, and they should have been denied admission to training schools.

Why were these young women allowed to graduate from training school? They each had a diploma of graduation. The possession of this diploma certainly encouraged them in the belief and the hope that they could secure registration, and yet the outlook for many of them

is absolutely hopeless unless they are gratuitously passed by the board. Would it not have been fairer, when it had been ascertained, as it must have been, long before graduation, that these girls, either because of inadequate education or lack of ability, were incapable of acquiring a nursing education, that they had been dropped from the school? Were they kept because their services were needed and could be secured at less cost than by employing graduates? If this is the case it is a defenseless exploitation of young women, and shows as well a disregard for the public good, for whether ever registered or not these girls will be *graduate* nurses and will be employed as such, even though they are denied remuneration equal to that of registered nurses.

Was the obstetrical training offered these girls adequate? This question applies to the larger number of the group only so far as it overlaps the two former questions discussed. They were not prepared to assimilate, regardless of how skillfully they were taught. But why were they allowed to pass their own school examination? There were others in the group under discussion, and still others whose grades were above sixty, but were low, who expressed ideas and opinions and advocated nursing practices, that were far from orthodox, and which would make them dangerous obstetrical nurses unless they were very closely supervised. It is hard to believe that either their didactic instruction, their text book study, or their hospital practice was adequate, fair to them, or safe for their prospective patients.

Training schools should not be operated solely for gain. They should select their pupils carefully, excluding those who show little or no promise of becoming successful nurses. They should recognize their obligation to those girls accepted and to the public which will look to them for nursing care. It seems that some South Carolina schools are violating these principles.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE  
STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 289 (25009), APRIL 5, 1935

*Service of Dr. Rhame*

Student Finkelstein (presenting abstract):

White male carpenter, age 66 yrs., admitted Nov. 1, 1934, died Jan. 30, 1935.

*History:* Occasional dull pain in abdomen for past 3 yrs., gradually becoming more severe and frequent. Pain now dull and constant, generalized over abdomen, with occasional radiation to chest. Occasional swelling of abdomen, with nausea and vomiting twice. Some discomfort with fatty foods for 15 months, unable to eat such foods now due to distress. No jaundice, but considerable itching of skin noted. Stools pale and hard, shape flat. Rare constipation. Gradual increase of weakness, with loss of weight of 35 lbs. in 2 yrs.

*Physical:* A somewhat emaciated male, weak, but able to sit up. Temp. 98.6, pulse 60, resp. 20, B.P. 140-75. Slight jaundice of skin, with multiple sores due to scratching. Chest "funnel-shaped." Broncho-vesicular breathing in rt. apex. No abnormalities. Mediastinum normal. Heart not enlarged, tones of good quality. No murmurs or arrhythmias. Arteries slightly hardened. Abdomen: Marked tenderness, with rigidity, over R.U.Q. Mass in R.U.Q., apparently continuous with or part of liver, another mass "apparently in or part of cecum or ascending colon." Enlargement of right testicle, nature undetermined.

*Lab:* Urine (8 exams) normal for first few exams, post-op specs. showed hyaline, finely and coarsely granular casts but no albumin. Leukocytes 15-20 and RBC 6-10 on Jan. 4, other specimens relatively free. Blood Count (on admission): Hb. 60 per cent, W.B.C. 19,700, polys 70 per cent, achromia noted. Subsequent counts normal until 1-26; Hb. 74D, WBC 13,200, polys 75 per cent. Van den Bergh (11-5) direct 1 plus, delayed direct 2 plus, quantitative indirect 4.6 mgs.; icterus index 10.2. Blood Wass. negative. Gastric analysis (11-4) free HCl 0, 10, 44; chemical

blood 2 plus, 4 plus, 2 plus. Feces clay-colored, hard, occult blood 4 plus; bile and urobilinogen neg. X-ray exams: Chest, Gastro-intestinal tract, Nasal sinuses—see chart.

*Course:* On 11-3, the mass described in rt. flank was thought to be just beneath the liver, smooth, about the size of a hen's egg, moving with, and apparently attached to, the liver. Mildly jaundiced. Exploratory laparotomy (Dr. Rhame) 11-20: "Large distended gall bladder with gangrenous area at fundus the size of a dime. Common duct distended, numerous fine adhesions about gallbladder. Liver probably a little smaller than usual. Chronic hepatitis. No nodules felt or masses seen. Pancreas hard and slightly nodular. Stomach, pylorus and other organs normal." Cholecystectomy and choledochotomy done. (Specimen lost) Wound continued to drain greenish serous fluid. Complained intermittently of headaches, pains in abdomen and in chest, but nothing could be found to explain these. On 1-25, patient fell back on bed, pulse slow and poor volume at this time. Nauseated. No precordial pain. B.P. 110-70. Considerable pain about umbilicus. Felt better, pulse improved after 3 hrs. Condition remained very poor, however. Vomited several times. Rales appeared in chest. Died. Temp. normal or below normal except for a slight post-op rise lasting days. Pulse 60-80 most of the time. Resp. unchanged.

Dr. Robert Wilson, Sr. (conducting): Mr. Bowden, will you start the discussion today?

Student Bowden: This patient evidently had some obstruction to the flow of bile, as evidenced by the clinically apparent jaundice, and the Van den Bergh tests. The direct positive Van den Bergh indicates obstruction to the passage of bile thru the biliary ducts, and the indirect test indicates some damage to the liver cells themselves. The finding of a distended gall bladder and common bile duct suggests that the obstruction is in the lower portion of the common duct. According to Courvoisier's law, impaction of a stone in the common duct usually gives a small



contracted gall-bladder, whereas obstruction of the gall-bladder from without, as from carcinoma of the head of the pancreas, usually gives a distended gall-bladder. If this law can be relied upon, we have here a case of compression of the common duct from without. Such an obstruction would most probably be a carcinoma of the head of the pancreas. It would doubtless be a primary tumor there. The testicular enlargement does not impress me as being a malignant neoplasm. The effect upon the liver is probably partly due to biliary obstruction and partly to metastases of the tumor there. A "latent" type of jaundice would hardly be what we usually expect with obstructive jaundice. I believe that there is also a chronic pancreatitis associated with the other conditions, doubtless due to pancreatic obstruction from the tumor in the head of that organ. The causes of death, to produce such a sudden termination, would probably have to be an embolus, but just what its location I would be unable to say.

Dr. Wilson: Mr. Stumbo, will you continue the discussion?

Student Stumbo: There is evidently some blockage of the common bile duct to give the jaundice, and more especially, the distention of the common duct noted at operation. Gall stones can be fairly well ruled out as they were searched for carefully at operation and none were found. The next commonest cause for obstruction of the common duct is carcinoma. This could be of the head of the pancreas, as the pancreas was thought to be nodular at operation, but I am more inclined to believe that it will be found at the ampulla of Vater, as there was considerable bleeding into the intestinal tract, as manifest by the occult blood in the stool. I believe that the condition of the liver is a chronic hepatitis as a result of the biliary obstruction. The termination was apparently by a sudden vascular collapse, and so I would expect embolism; this may be in the lung, altho there is nothing on the abstract to definitely confirm this. The usual termination in such cases is by a broncho-pneumonia, but this man's death was much too sudden for such a development.

Dr. Wilson: Let's get Mr. Kronrad to help us with this case.

Student Kronrad: We have a case of biliary

obstruction without a history of colic to suggest gall stones, and without any stones having been found at operation. Such a condition of biliary obstruction is rather characteristic of carcinoma of the head of the pancreas. As to the cause of death, the sudden umbilical pain, slow pulse, and rapid fall in blood pressure strongly suggest a coronary occlusion, and the development of rales in the chest terminally strengthens such an assumption.

Dr. Wilson( demonstrating x-ray films and reading x-ray report): "Negative x-ray examination of the chest except for slight non-progressing dilatation of the aorta." The barium meal showed no gastric pathology. The examination of the colon by barium enema was reported as follows: "Persistent gross irregularity of ascending portion of colon, probably the result of a new growth." Would any one like to change their diagnosis after seeing the x-rays?

Student Lemkin: This irregularity seen in the ascending colon could well have been due to the presence of fecal masses. I would have liked to have had another enema at a later date before drawing any conclusions from the deformity noted. There are no symptoms of chronic intestinal obstruction as would be expected from such a growth, and the clinical findings being fairly definite in the other direction would make me hesitate to discard them on the basis of an x-ray film that is as subject to question as this one is.

Student Matthews: I do not believe that feces could give such a deformity, and I believe that we should rely more on the roentgenologist's opinion. He fluoroscoped the colon, and had much more to go on than we have here in a single film.

Student Bowden: The fecal material in the cecum and the ascending colon is liquid, and I do not believe that it could cause such a deformity.

Dr. Rhame: There was considerable difference of opinion among the members of the visiting staff as to the cause of this man's condition. I thought that I could feel his gall-bladder, and thought that such a finding indicated an exploratory laparotomy; the patient also requested it. From an x-ray standpoint, a positive diagnosis of carcinoma of the colon

seemed reasonable, but at operation the colon was found to be uninvolved. At operation I was very suspicious of the condition of the pancreas, and you see that I recorded on the operative report that the pancreas was hard and nodular. The common duct was about the size of your little finger, and for this reason, in association with a fairly evident chronic pancreatitis, a choledochotomy was done. A large drainage tube (about a 22 French T-tube) was inserted without difficulty and a large amount of bile drained outward. It seemed that he was improving until his sudden collapse, the cause of which could not be determined.

Dr. Prioleau: It has been suggested that the diagnosis of carcinoma of the ascending colon was untenable because there were no obstructive symptoms. This does not rule out a tumor in this location by any means, as we frequently see large tumors there without any obstructive symptoms. At operation a portion of the gall bladder wall was found to be gangrenous, and this early positive finding might detract somewhat from the value of the exploration; possibly a mass in the colon could have been overlooked. The common duct was well probed out indicating that there was no complete obstruction of its lumen. The condition of the pancreas as described at operation makes one very suspicious of the presence of a malignancy at this location, but in my experience the case of carcinoma of the head of the pancreas has been quite characteristic, with a much deeper jaundice than is recorded here, and with progressive deepening of this jaundice as the growth increased in size. The jaundice in this case seems to have been questionable, and the icterus index is certainly below that usually gotten in jaundice that is clinically evident. This atypicality of this patient's course makes a definite diagnosis almost impossible.

Dr. Wilson: I believe that the clinical picture is very strongly suggestive of carcinoma of the head of the pancreas, altho the jaundice is certainly not as conspicuous as that usually seen in such a case. But the nodular condition of the pancreas as found at operation can hardly be overlooked.

Dr. Lynch: This man had a carcinoma of

the head of the pancreas, just where the pancreas is agglutinated to the descending portion of the duodenum. There is a small nodular infiltration at this point, while the rest of the pancreas appears normal. The growth had extended directly across to the walls of the duodenum, about the ampulla of Vater, as you can see here (demonstrating autopsy specimen). There is a large ulcerated and infiltrated area here about the ampulla, and its margins are somewhat fungoid. The bile ducts, both within and without the liver, are markedly dilated, and their linings are stained green with bile. Of course the bile was draining to the exterior as a result of the choledochotomy, and this free drainage of the bile prevented the development of the classical late-stage picture of carcinoma of the head of the pancreas, with its extreme jaundice. No jaundice could be noted at autopsy. Altho there was a marked dilatation of the common duct, its lumen could still be probed, possibly as a result of the mucosal ulceration about its mouth. The condition of the liver is that of a fairly long-continued infective cholangitis, and an early stage of obstructive biliary cirrhosis.

Whether this tumor began in the pancreas and went to the duodenum or began in the duodenum and extended to the pancreas was the question that was difficult to determine. Grossly, the ulceration about the ampulla was very suggestive of a primary tumor there, but the microscopic appearance, with rather well developed new-formed tubules, closely resembling pancreatic acini, pointed more towards the pancreas as the tissue of origin.

Little else was found at autopsy. There was no evidence of embolism, altho the brain was not examined. There was no evidence of a pulmonary infection. The infective condition of the liver was fairly well drained by operation. And so the immediate cause of death was not accurately determined.

The deformity of the colon as demonstrated by the x-ray must have been due to adhesions. These were noted at operation and were very numerous, especially about the hepatic flexure, at autopsy. There was no intrinsic lesion of the bowel.



## SOUTH CAROLINIANA

J. I. WARING, M.D., CHARLESTON, S. C.

PURPURA HEMORRHAGICA IN PREGNANCY—H. W. deSaussure and E. W. Townsend, Charleston. *Am. J. Obs. & Gyn.* 29 April 1935—597.

Report of a case in which bleeding into the urinary tract was a prominent feature. There was marked reduction of renal function.

THE SIGNIFICANCE OF LABORATORY FINDINGS IN DIABETES—F. B. Johnson, Charleston. *Sou. M. & S.* 97 May 1935—257.

Review of the value of the laboratory in Diabetes with an illustrative case report.

DIABETES FROM THE STANDPOINT OF THE INTERNIST—G. R. Wilkinson, Greenville. *Sou. M. & S.* 97 May 1935—243.

An outline of the management of the diabetic patient in the office.

SUPPURATIVE PERICARDITIS—G. H. Bunch, Columbia. *Am. J. of Surg.* 28 June 1935—613.

The author finds that this condition is not rare in children and young adults, and that it is frequently not diagnosed. The only treatment is surgical. Illustrative case reports are given. The article is well illustrated.

PROSTATIC RESECTION—T. M. Davis, Greenville. *Urol. & Cut. Rev.* 39 June 1935—372.

A comprehensive discussion of the author's methods and experiences with prostatic resection with the aid of the cystoscope.

TRANSURETHRAL REMOVAL OF URINARY CALCULI—L. P. Thackston, Orangeburg. *Urol. & Cut. Rev.* 39 June 1935—423.

A sketch of the history of removal of calculi and discussion of the feasibility of the transurethral operation. The author finds the mortality low when the operator possesses the necessary skill.

SUTURE OF STAB WOUND OF THE HEART—G. Benet and C. G. Spivey, Columbia. *J. A. M. A.* 104 June 1, 1935—1979.

Case report of successful operation upon the heart, with discussion of the technique of operation.

APLASTIC ANEMIA FOLLOWING STOVARSOL (ACETARSONE) THERAPY—D. L. Smith, Jr. and R. A. Lyon, Spartanburg. *J. of Ped.* 6 May 1935—624.

Case report with details of treatment. This appears to be the first report of this kind, the other medication than Stovarsol was used in this instance. The child recovered.

PULMONARY ASBESTOSIS III—CARCINOMA OF LUNG IN ASBESTO-SILICOSIS—K. M. Lynch and W. A. Smith, Charleston. *Am. J. of Cancer* 24 May 1935—56.

Report of a case in a man who worked many years in cotton mills and an asbestos factory, and had the characteristic fibrosis of silicosis, with carcinoma arising from the metaplastic epithelium of one of the smaller bronchi.

## BOOK REVIEWS

MANUAL OF CLINICAL LABORATORY METHODS, by Pauline S. Dimmitt, Ph.G., Medical Technologist for the Stout Clinic, Sherman, Texas. Former Instructor in Biological Chemistry, University of Texas School of Medicine; and Medical Technologist in the Pathological Laboratory, John Sealy Hospital, Galveston, Texas.

Illustrated with 36 engravings, including 7 full page colored plates, Philadelphia, F. A. Davis Company, Publishers, 1935.

This book was first published in November 1934 and reprinted in July 1935. One is impressed immediately with the simplicity of the plan. There are eighteen chapters as follows:

- Chapter I. Examination of Urine.
- Chapter II. Examination of the Blood.
- Chapter III. Examination of Sputum.
- Chapter IV. Examination of Gastric and Duodenal Contents.
- Chapter V. Liver Function Test.
- Chapter VI. Examination of Feces.
- Chapter VII. Examination of Transudates and Exudates.
- Chapter VIII. Examination of Cerebrospinal Fluid.

Chapter IX. General Bacteriological Methods.

Chapter X. Preparation of Autogenous Vaccines.

Chapter XI. Examination of Milk.

Chapter XII. Agglutination Tests for Bacteria.

Chapter XIII. Blood Transfusion Tests.

Chapter XIV. Complement Fixation Tests for Syphilis.

Chapter XV. Eagle Flocculation Test for Syphilis.

Chapter XVI. Blood Chemistry.

Chapter XVII. The Hormone Test for Pregnancy.

Chapter XVIII. Volumetric or Standard Solutions.

It is important that every practitioner be familiar with the routine laboratory methods in modern practice and if he can carry out personally these tests so much the better. At any rate he should be familiar with the progress being made in this branch of medicine and this book will serve that purpose admirably. There are only one hundred and fifty six pages, therefore, it can be read from cover to cover almost at a sitting. The illustrations are very good indeed.

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## COLUMBIA MEDICAL SOCIETY

The Columbia Medical Society met, Monday, June 10, 1935, in the Crystal Room of the Columbia Hotel at 8:30 P. M.

The following program was carried out:

1. Methods Employed in the Diagnosis of Ano-Rectal Diseases—Dr. Benj. Rubinowitz.

2. The Hard of Hearing and the Otologist—Dr. W. J. Bristow.

O. B. Mayer, M.D., President.

Benj. Rubinowitz, M.D., Secretary.

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### ISCHIO-RECTAL ABSCESS AND RECTAL FISTULA

*By*

WILLIAM H. PRIOLEAU, M.D., F.A.C.S.  
Charleston, S. C.

Due to trauma from the passage of constipated stools, frequently containing abrasive material, and the constant presence of pathogenic micro-organisms, the rectum is often the site of abscess formation. Some involve only the skin or mucous membrane, while others the crypts and deeper tissues.

The subcutaneous space at either side of the rectum is designated as the ischio-rectal fossa. Its limitations are the rectum and levator ani muscle medially and above, the tuberosity of the ischium laterally, and the skin below. It contains fatty tissue and the pudendal vessels.

This space is frequently infected as the result of organisms entering the rectal wall through tears in the mucosa and infected crypts, and passing through it to the fatty tissues on the outside. It may be infected also from abscesses of peri-anal hair follicles, and in the male from posterior urethritis. The infecting organism is generally *B. coli*. Formally it was considered that these infections were tuberculous, but recent work has proven that only a small percentage are of this nature. No doubt this idea gained credence due to their chronicity and their occurrence more frequently in run down individuals. Even in the tuberculous ones the colon bacillus is a constant secondary invader.

Ischio-rectal abscesses occur in both sexes and at all ages. They are found more commonly in men. The fatty tissue becomes indurated. As the space is more or less limited by fascial

planes, increased tension soon develops. Suppuration occurs late. The abscess may extend around the posterior of the rectum and involve the corresponding region on the other side. Occasionally it passes through the levator ani to form a pelvi-rectal abscess. The tendency is for it to rupture through the skin of the buttock or into the anal canal. With the establishment of drainage in this manner the inflammatory process subsides, but due to its inadequacy a fistulous tract remains. This is reinfects through a small but persistent opening into the anal canal, generally in the bottom of a crypt, resulting in intermittent swelling followed by discharge through the skin opening which affords temporary relief. With the passage of time there is a tendency for subcutaneous burrowings with the development of other skin openings.

The clinical picture is that of constant pain and extreme tenderness on one side of the anal orifice. There is some systemic reaction to the infection. Upon examination there is found general swelling and induration to one side of the anus. This is particularly noticed by palpating with the index finger in the rectum and the thumb on the outside. The overlying skin is generally of normal color, as the skin itself is involved only late. The inguinal glands may be enlarged and tender.

The treatment consists in early and adequate drainage by incision through the skin of the buttock. This should be done as soon as induration is detected. Poulticing only gives time for the process to spread. A regional or general anesthesia is preferable so as to permit thorough exploration. In an early case local skin infiltration with novocain is satisfactory. The incision should be of a type that will remain open. A-T-form is satisfactory—or a piece of



skin may be excised. Exploration should be made to detect pockets and give them drainage. The walls of the cavity should be held apart by vaseline gauze or rubber tissue until the acuteness of the process has subsided. This should be changed daily, and a hot sitz bath given. If the drainage has been timely and adequate, the abscess heals without leaving sequellae.

A fistula is generally the result of an extension from an infected crypt or of an abscess which has been inadequately drained—it is a tract between the anal canal and the skin. As with the abscesses they are mostly of a pyogenic nature, only a small percentage being tuberculous. As a rule there is only one opening in the rectum while not uncommonly there are a number of openings on the skin. The discharge is purulent, and practically never contains fecal matter. Where the skin openings are around the posterior half of the anus, the internal opening is invariably posterior. In the anterior half the internal and external openings are generally opposite each other. The fistulous tract commonly runs between the internal and external sphincters, but at times between the fibers of the external sphincter or subcutaneously. Thus the internal opening is only rarely above the internal sphincter. This is an important point in the treatment.

The course is one of chronicity. Swelling is followed by pain. Discharge through the skin opening gives temporary relief. There is a tendency for the infection to burrow posterior to the rectum, laterally to the ischial tuberosity, and even above the levator ani.

In order to effect a cure, it is necessary to give complete drainage to the fistulous tract and all of its pockets and ramifications. It is well to locate the internal opening at the start. This is generally found posteriorly at the bottom of a crypt. A grooved director may be inserted, and either at first or later this portion of the tract may be opened by incising the tissues external to it, including the fibers of the external sphincter. The subcutaneous portions of the tract should be laid open, taking care to overlook no pocket. In this region the inflamed tissue may be excised, though it is not necessary to do so.

It is essential that overhanging skin and mucosa edges be excised so that healing will take

place from the bottom upwards. The portion of tract in the region of the sphincter should not be excised, as this anchors the ends of the muscle and prevents gaping with insecure healing and fissure formation. A small wick of vaseline gauze is placed along the tract into the anal canal. A firm dry dressing is applied. After the first three days the gauze is changed daily until healing has occurred. The anus is cleansed with cotton and water after each bowel movement and kept dry with a firm dressing of gauze pressed against it. Before the first bowel movement a few ounces of mineral or olive oil are instilled into the rectum through a small catheter. Mineral oil is given by mouth. The patient leaves the hospital after the third day and may resume work. The wound heals in the course of two or three weeks in the average case.

The operation is most easily performed with the patient lying on the abdomen with pillows under the hips. Regional or general anesthesia is preferable; however, local may be used in simple cases.

Great care should be taken to locate the internal opening and not to make a false one. Sufficient skin external to the anal canal should be excised so as to provide adequate drainage. The tract in the region of the sphincter should be held apart with a thin strip of gauze and not firmly packed, as this will separate the ends of the muscle. Should the involvement around the sphincter be extensive, it is well to defer excising the inner portion of the tract until a later time so as to avoid an unsatisfactory healing of the sphincter due to its ends retracting.

No incontinence results from dividing the sphincter, provided it is cut straight across and the wound kept clean so as to prevent sloughing. The anal canal heals smoothly without fissure formation and it functions perfectly.

#### SUMMARY

1. Rectal infections are generally of pyogenic nature and result from the trauma caused by the passage of constipated stools and the constant presence of pathogenic micro-organisms.
2. Ischio-Rectal abscesses should be drained early and thoroughly by incision.
3. Rectal fistula generally is the result of an

infected crypt or an inadequately drained ischio-rectal abscess.

4. Rectal fistula is treated by incision and drainage of the whole tract, with division of the overlying fibers of the external sphincter muscle.

### DISCUSSION

Dr. Thomas Brockman, Greenville:

Congratulations to Dr. Prioleau for giving us this good paper. He is one of this Society's best contributors to medical literature. I am glad he selected Rectal Abscess and Rectal Fistula for two main reasons:

First: Rectal abscess is often a very serious affair when occurring in patients above sixty years of age, or even in younger individuals if allowed to ripen and penetrate the deeper structures. The elderly patient rapidly goes into a delirium or coma, often simulating prostatic obstruction with all of the toxic manifestations seen in this type of patient. Sometimes the abscess area is not recognized in this type until rupture occurs.

Second: Because I am sure there are too many good doctors who believe the abscess should ripen before being incised, which is a serious mistake. Early drainage by incision and scalping of the area under general anaesthesia is the ideal or modern treatment for rectal abscess. I say general anaesthesia because local or regional anaesthesia does not in my hands furnish a relaxed patient. Complete relaxation is essential to do a thorough drainage operation breaking down the fibrous bands, exploring the various pockets encountered with glove finger and of thoroughly establishing drainage. By doing a good job of operating a rectal abscess we nearly always prevent the formation of rectal fistulae, which is, as you all know, the natural sequelae as Dr. Prioleau has told us.

There is a strong tendency amongst medical men to lance the abscess and relieve the patient of the constant pain, but I would like to urge that this condition be treated as an emergency operative procedure and carried to the hospital where it can be done properly and after care given.

Suppose we do our duty when the patient is first seen and prevent a second operation for a complicated fistula, often times several years after the original abscess. When these patients are once relieved of the pain from abscess by incising the area, we have all seen this same patient carry a chronic draining rectal fistula for years before submitting to surgery.

Just a word on prevention of rectal abscess. The infection nearly always enters through one of the anal crypts, generally the post anal crypts. The internal opening of a rectal fistula is nearly always found in an anal crypt. Let's learn to recognize infection of anal crypts and operate these patients before abscess formation, always the first stage of fistula.

I again want to thank Dr. Prioleau for his splendid paper.

Dr. L. H. McCalla, Greenville:

I think there are very few pathological processes involving the lower colon and the anal canal that give us more concern than sometimes this condition of ischio-rectal abscess and fistula. As the Doctor brought out, I feel that the pathological process begins in an infected anal crypt, burrowing through to the deep peri-anal tissue, with abscess formation. Unfortunately, these patients as a rule seek medical relief late, after a well established abscess is formed. Even then, with insufficient drainage, as the Doctor brought out, anal fistula is usually the final result.

There is one thing he mentioned—locating the internal opening in preparing for this operation is a very important thing. It obviates quite a great deal of embarrassment to locate the opening and follow it through from that end. Invariably, or I might say in ninety per cent of the cases, the opening is found in the midline of the rectum.

As to anaesthesia, in operating only for fistula I like sacral anaesthesia as well as any, although in the difficult cases of abscess formation and induration we have to give a general anaesthetic. In the postoperative care I think it is very important after each bowel movement to give a hot-water irrigation; then by daily supervision of the wound, applying mild antiseptics and by taking a cotton swab and passing it through the depths of the wound you can prevent the skin from adhering or bridging over. I think the postoperative care in these cases is very important.

Dr. S. E. Harmon, Columbia:

Just one suggestion. If those of you who do rectal work have never tried caudal anaesthesia, just try it. I think it is free from danger, and it works very nicely.

Dr. Prioleau, Closing the Discussion:

I just want to thank the gentlemen for the discussion.

The term "regional anaesthesia" is used to include, of course, the sacral and the spinal anaesthesia.

### THE CLINICAL ASPECTS OF PRIMARY PULMONARY CARCINOMA

By

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There has been a striking increase in the incidence of carcinoma of the lung, or more correctly carcinoma of the bronchus, in the past two decades. This increase has been ascribed

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to several factors. One of these is longevity. More people are reaching the "cancer" age than ever before. Life expectancy has increased to 58 years. Fewer people are dying of typhoid fever, diphtheria, and tuberculosis; hence, according to Wells, "A high cancer death rate is evidence of a good state of public health."

Recent statistical studies reveal that the increase of pulmonary neoplastic disease is far in excess of the increased occurrence of general cancer. Another factor, then, must be better recognition. Improved facilities of study have tended to greater diagnostic accuracy. Many cases which have been classed otherwise have been brought to light. It has been pointed out that with the use of the equipment now at hand, viz., the X-Rays, the bronchoscope, pneumothorax, the thoroscope, opaque substances, etc., the diagnosis of cancer of the lung should be correct in 75 per cent of cases.

The increase in this disease has been attributed also, as in cancer in other locations, to some form of irritation. Automobile gas, smoke, tar dust from the roads, etc., have been incriminated as well as influenza because of the peculiar epithelial regeneration which occurs in healing. It has been shown that workers in the mines of the Erz Mountains have a high incidence of cancer of the lung, and this has been ascribed to the arsenic content of the mine dust. Radioactive substances in the dust have been thought to be a factor also. Speculation as to the possible relationship of dust hazard occupations has arisen, but up to the present time this has not been established. However, we have encountered two cases of primary carcinoma associated with asbestos fibrosis (asbestosis).

Whatever the etiological factors concerned, the fact remains that carcinoma of the lung is more and more frequently presenting itself for diagnosis. Clinicians should be mindful of its possible presence, and attempts should be made to discover it in its early stage, for then and only then is there a possibility of its cure.

The bronchoscopist and the surgeon have already successfully treated a number of these cases. The diagnosis in the advanced stage, too, is of more than academic interest because of its economic potentialities to the patient.

The neoplasm develops most frequently after 40, the average age being 49. It is more common in men than in women. It has no predilection for race. In the early stages a cough which does not respond to rest, and associated with bloody sputum, negative for tubercle bacilli, and showing little or no evidence of lung pathology, either by physical examination or by X-Rays, constitute the most dependable group of symptoms for which bronchoscopy is indicated, and a small bronchial growth may be revealed. There is little loss of weight, anaemia or loss of strength at this time. It is here that surgical, roentgen and radium treatment achieve some success. Beyond this stage the clinical picture becomes more complicated. This is readily understood when we consider the mode of origin and the methods by which the disease progresses. There are three main sources of origin: (1) from the mucous membranes of the bronchus, (2) from the cells lining the mucous glands, and (3) from the pulmonary alveoli themselves. (This last has not been proven, but is accepted by some pathologists.) The neoplasm may simply infiltrate the lung—the so-called "infiltrative type"—causing a massive consolidation restricted for a time at least to one lobe, and simulating lobar pneumonia. The chief symptoms here are dyspnoea and loss of weight and strength; there is little or no cough and practically no fever. The roentgen picture suggests pneumonia also.

When, however, partial or complete bronchial occlusion occurs, there are numerous pathological changes which develop: atelectasis, bronchiectasis, necrosis, pleural effusion and thickening, secondary infection. A multiplicity of symptoms and physical signs will result. Pain in the chest, dyspnoea, cough, sputum of varying characteristics—often bloody, sometimes foul, chills, fever, sweats, loss of weight and strength, are all common, occurring in varying combinations. To cloud the issue still further, metastatic involvements often develop, and in some cases "steal the picture." The roentgenogram in these conditions is equivocal, but always of diagnostic importance. The laboratory is rarely helpful.

Few of these advanced cancers are benefitted by therapy, though occasional favorable results

from roentgen treatment are reported, but the solution of the complicated clinical mystery is satisfying to the physician and of real importance to the patient and his family, as it removes the "stigma" of tuberculosis, and at the same time possibly conserves their financial resources.

I would like to present a few cases which illustrate pretty well the more common clinical aspect of the disease.

#### CASE I

A. B. A colored female, who gave her age as 40, but was probably older, was admitted to the Roper Hospital in May, 1926, with a diagnosis of pulmonary tuberculosis. She gave a history of having had cough, hoarseness, heavy feeling in her chest, and night sweats for a year. She remained under observation at the hospital for three weeks; the physical findings showed dullness over base of right lung, with diminished breath sounds. Aspiration was attempted, but no fluid obtained. She had some of the stigmata of syphilis; corneal ulcer; moderate general glandular enlargement; numerous pigmented scars, and a positive blood test.

She remained in the hospital three weeks, during which time she had a slight daily elevation of temperature to 99 to 100, on two occasions going as high as 102.

The report of the roentgenologist was as follows: X-Ray of the chest with the fluoroscope and film shows right chest half full of encapsulated fluid. (Case 3, page A.)

In September she came to the Chest Clinic in the out-patient department; examination at this time showed dullness and absence of breath sounds over the entire right lung, and dullness, coarse rales, modified breathing on the left. The patient was very much emaciated. It was believed that she had extensive pulmonary tuberculosis with a pleural effusion on the right, and a caseo-pneumonic process on the left. She entered the hospital on October 5th. Numerous sputum examinations failed to show tubercle bacilli. Vigorous anti-syphilitic treatment did not improve her condition; cough, dyspnoea, and pain in her chest grew progressively worse. The second X-Ray film, taken four months after the first, showed marked density throughout the right lung and two-thirds of the left.

Autopsy revealed primary carcinoma of right lung with metastasis throughout left.

#### CASE II

A white man of 50 years, clerk in a Government office, found in the middle of June, 1932, that he was growing extremely weak, and slight effort produced great fatigue. Soon he noticed that he was having tarry stools. He had noticed during the preceding month that his abdomen was growing much larger. He thought he was getting fat. He also had had some gastric pains after eating during this time. In July he coughed up blood streaked sputum.

Physical examination revealed dullness and diminished breath sounds over right base, a few rales in second interspace. Tubercle bacilli were found in his sputum. A large amount of fluid was obtained on tapping his abdomen. This had the characteristic of transudate.

On removal of fluid palpation revealed liver enlarged and nodular.

During course of illness he had a septic temperature, sweats, cough, and pain in right side of chest. He lost ground rapidly, growing thinner and weaker daily. He had to be tapped frequently to give relief. He died in October 1932.

The final diagnoses were: Gastric ulcer; pulmonary tuberculosis; carcinoma of liver, metastatic from an unknown primary source.

The pathological diagnosis was: bronchogenic carcinoma with metastasis to liver; gastric ulcer; pulmonary tuberculosis.

#### CASE III

W. S. White policeman, aged 40. In October, 1931, had a chill followed by fever which lasted a few days, and cough. Cough persisted. Not productive at first, but later had purulent sputum, which was bloody for a time. Had recurrent attacks of chill and fever. In February, 1931, had an X-Ray made, and it was thought he had a "peculiar" type of pneumonia. Was under continuous observation until July 8, 1933, when death occurred. During this time he suffered a great deal of pain in the left chest, cough, dyspnoea, loss of weight and strength, and toward the end by septic symptoms.

The physical signs varied considerably



throughout the disease, but at first consisted simply of a few scattered rales over the right base. As the disease progressed, dullness, diminished breath sounds, and displaced apex impulse to left.

Except for a positive Kahn the laboratory examinations were not significant.

The diagnosis of this case could have been made by bronchoscopic examination as early as October, 1931, but it was not until several months after onset, and then by process of elimination.

The serial roentgenograms trace the progress of the disease and the effects of the obstruction on the surrounding lung structures.

The pathological examination showed a hard, large growth just below the bifurcation of the bronchus on the right, with atelectasis of the lower lobe and bronchiectasis of the upper. The lung substances also showed some extension along the lymph channels. There was no obvious metastasis. His cranium was not opened, but his symptoms prior to death suggested the possibility of metastasis of the brain. This is not an unusual occurrence.

#### CASE IV

The subject was a white man, 57 years of age at the time of death. He first came under observation at the Shirras Dispensary of the Roper Hospital January 10, 1934, at which time he appeared very old, weak and emaciated.

His chief complaints were pains in the right side of "stomach", right side of back and shoulder, and shortness of breath.

History of present illness: Prior to 1931 his health was good and practically no time was lost from work as a result of illness, although for the previous five years he had noticed some shortness of breath. In 1931 he lost three days from work on account of sharp pains in his back extending down over the three lower ribs. Nine months later intermittent sharp shooting pains recurred, involving his right shoulder. This lasted about ten days. Except for the shortness of breath noted it was not until November 7, 1933, that the pains again occurred, involving the right shoulder, axilla, and the three lower ribs on the same side. The pain occurred about every hour and lasted about thirty minutes. It seemed to be more severe

during the night. In addition to the pain he became quite weak and seemed to lose weight. He was now compelled to quit work and seek medical aid. During November and December, under medical care, he grew weaker, lost more weight, his dyspnoea became more aggravated, and a cough, productive of wiry, white mucoid sputum, developed. On January 8, during a spell of coughing, he expectorated a mouthful of fresh blood mixed with mucoid material.

Occupational history: He was a weaver in a cotton mill for 22 years and a weaver in an asbestos factory for 21 years.

Course: Throughout his stay in the hospital the patient continued to complain of persistent pain along the right costal border and right side of abdomen, the cough, accompanied by expectoration of a large quantity of mucopurulent sputum, continued and became more aggravated. There was anorexia and progressive loss of weight and strength. For the first three weeks after admission there was an irregular afternoon elevation of temperature. In the latter weeks of the illness fever of remittent type was constantly present (99 degrees-101 degrees) rising on the day of death to 104 degrees. The pulse rate ranged between 90 and 100. The respiratory rate was constantly above normal, and on the slightest exertion there was dyspnoea.

Chest: The bony thorax was of the emphysematous type. Expansion was equal but poor. Dullness was present over the bases of both lungs, being more marked on right. The upper levels were resonant. Breath sounds were suppressed over the right base. Rales of all varieties were present in the lower posterior and axillary aspect of the chest, though less numerous over the right base than the left. They were increased by cough. There were numerous coarse dry "squeaking" sounds over the upper lobes as well.

X-Ray examination of chest, (by Dr. Hiller Rudisill): "First examination, Jan. 12, 1934. There is a generalized fibrosis throughout both lungs, particularly in the bases. There is generalized increased density in the right base, probably caused by pleural thickening. In addition I believe there are bronchiectatic areas through the lower halves of both lungs.

"Impression: Pulmonary fibrosis, pleural

thickening (particularly right base), and bronchiectasis—probably the results of inhalation of some irritant material.”

Laboratory examinations: Tuberculin test, Mantoux, negative. Wassermann negative. Sputum—no tubercle bacilli on numerous examinations. Asbestosis bodies present in unconcentrated viscid tough muco-pus. Fungi negative.

The final diagnosis was asbestosis and chronic indurative pneumonia.

#### PATHOLOGICAL RECORD

Autopsy (B.G.) No. 20514-34-58, March 17, 1934.

Summary of pathological diagnosis: Fibrosis of Lungs; Pulmonary Asbestosis; Epidermoid Carcinoma of Right Lung; Bronchiectasis; Bronchitis, Purulent; Pleurisy, Acute; Myocarditis, Chronic.

#### DISCUSSION

Dr. E. W. Carpenter, Greenville:

This condition has been thought to be rare, but it is perhaps not so rare. If recognized in its early stages, perhaps a great deal can be done. Dr. Smith did not say anything about it, but perhaps an early lobectomy could be done, or, if wise, a pneumonectomy, or perhaps taking out the whole lung on that side.

There is a thing that might help you in your diagnosis that the doctor did not mention. Opaque substances in the lungs help you to find the lesion, if the obstruction is located there. You can visualize the bronchial tree with greater clarity if you use opaque substances. The technic is not so easy as it sounds. You can do that previous to a bronchoscopy and then take a section through the bronchoscope.

Dr. E. C. Hood, Florence:

I certainly have nothing to add to the paper; I think Dr. Smith covered the subject beautifully. I feel very much as Dr. Smith has said, and Dr. Carpenter has added in his discussion, that this is something well worth while and something that we should be thinking about. This is one of the things which confronts every day those of us who are dealing with lungs. So I want to say again, I enjoyed Dr. Smith's paper.

Dr. T. R. Littlejohn, Sumter:

I should like to ask Dr. Smith a question. In the second case that he reported I believe he said they found tubercle bacilli in the sputum; but on the autopsy reports he did not say whether the man had tuberculosis, too. This man had primary carcinoma of the lung. I should like to ask these gentlemen

what has been their experiences in these chronic pulmonary conditions, especially tuberculosis, with the positive Wassermann. In most of the cases that I see of chronic pulmonary conditions they have positive Wassermann reactions. I do not believe that the majority of these cases have syphilis; as syphilis of the lungs is a very rare condition.

Dr. Smith, Closing the Discussion:

There are a good many more things I might have said, but having the thought of these fifteen minutes hanging over me all the time kept me pressed.

In regard to Dr. Littlejohn's question, I do not think I made that so clear. In that second case the man had pulmonary tuberculosis clinically and pathologically. He had three diseases, and I do not blame myself or others for not making a diagnosis. He had gastric ulcer, pulmonary tuberculosis, and had primary carcinoma of the lung with metastatic carcinoma in the liver and other parts of the body. With regard to Dr. Littlejohn's other question, I think the positive Wassermann reaction is usually indicative of syphilis. We very frequently find those two chronic diseases associated in the same person, pulmonary tuberculosis and syphilis. This combination presents a therapeutic problem about which there is no agreement. I think where the two diseases are equally evident, we had better treat them both vigorously. If the tuberculosis dominates the picture, and the syphilis appears to be quiescent, I believe in treating the tuberculosis with vigor and the syphilis more or less with contempt.

#### THE MANAGEMENT OF THERAPEUTIC MALARIA FOR SYPHILITIC MENINGO-ENCEPHALITIS (GENERAL PARESIS)

By

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In presenting this paper an effort will be made to give you as briefly as possible what are the most important things to keep in mind when managing a case of therapeutic malaria.

##### 1. Methods of Inoculation.

At the South Carolina State Hospital we use two methods of inoculation. (1) By the mosquito that has been infected with malaria, (2) by citrated blood taken from an active case of malaria. We have used emulsion of sporozoites taken from the mosquito's stomach for

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inducing malaria, this being given subcutaneously. This method has been discontinued on account of the danger of mixed infection and the prolonged incubation period. I do not believe that it makes any difference as to the method of inoculation so long as the patient gets the malaria and a pure strain. Malaria can be obtained from the South Carolina State Hospital. If you have a patient that you wish to have inoculated with malaria and will write to us stating whether the individual is colored or white, we can send you the blood by mail and you may inoculate the patient; or if you prefer, you can send the patient to the hospital and we will be glad to inoculate for you. I would request that anyone sending a patient to the hospital for an inoculation would please write ahead of time, because malaria is not always available, and it may save you some trouble by making an appointment; and when the patient arrives, there will be no delay in inoculating him and returning him home. I have not observed any anaphylactic reaction following the inoculation of patients in the hospital. There is a possibility of this occurring, and one should always be on the lookout for such complications.

## 2. Inoculation Period.

Before the patient develops the malaria, it is not necessary that he be in a hospital; however, he should be kept at home where he can be closely watched by competent individuals. The malaria usually develops in seven to thirty days, depending upon the type of inoculation. The mosquito inoculation is much slower than the tertian. We use two types of malaria—tertian for white people and quartan for the negro race. It is extremely difficult to get a take in the colored race, and in trying out the different types of malaria we have found that quartan will give about 95 per cent positive takes in the colored race. The benign tertian is the ideal type of malaria to use, because it is easy to control and does not wear down the patient's resistance so rapidly.

## 3. Number of Paroxysms Necessary.

This is a question which we cannot answer definitely. We believe that less than eight paroxysms will not do any good and that the average case should run from twelve to fourteen if the individual's condition is such as to permit it. We have had some cases which were

allowed to have as many as twenty paroxysms. We do not consider patients as having had a paroxysm unless there are chills with fever not less than 102. Temperature below this is not considered sufficient.

## 4. When to Terminate Malaria on Account of Complications.

No two individuals are going to react the same; therefore, no definite rule can be formulated. There are certain conditions which if watched closely will give you a general idea of the individual's resistance and indicate when he has reached the danger period which shows that it is no longer safe to allow the malaria to continue. Before an inoculation it is necessary to make a thorough physical examination of the individual and record on the chart the following: weight, age, height, blood pressure, total leucocytic count, total erythrocytic count, differential count, hemoglobin, blood urea, creatinin, blood sugar, and urinalysis. These having been recorded, it is then easy to note the variations. Anemia sometimes develops early and progresses rather rapidly. This is very easily detected by the color of the patient's mucous membranes. The laboratory work will give you an accurate check as to the degree of anemia. Sometimes the hemoglobin falls rapidly; and when it reaches forty per cent or the red blood cells decrease to two and a half million, you are within the danger zone and it is not wise to continue the malaria. The blood pressure should be carefully watched; and if there is a constantly falling systolic pressure with a rising diastolic, it is a warning that you must pay close attention to the heart action. As long as the blood pressure remains fairly well stationary, or not over a drop of 20 to 30 points, the patient is fairly safe. There usually is a tachycardia accompanying a constant falling blood pressure; and if this condition persists between paroxysms when the temperature is practically normal, it is not wise to continue the malaria. Sometimes convulsions and paralysis develop during the course of the malaria, and this calls for an immediate termination. A rapidly developing coma calls for drastic measures to stop the malaria, as this may indicate that the capillaries of the meninges of the brain are beginning to become clogged with parasites. Delirium and mental excitement will

sometimes come on very suddenly during the treatment, and it is for this reason that it is always preferable to have the patient in a hospital, or if in the home to have a nurse constantly at hand. Sometimes their mental state becomes so disturbed that it is necessary to terminate the malaria. Albumin and casts are present in the majority of these cases. Large amounts of albumin and much increase in the number of casts should be watched very carefully. The appearance of blood in the urine is sufficient within itself to warrant stopping the malaria. Fever sometimes reaches such a great height that it constitutes a complication. We do not use drugs to control fever. High temperature is controlled entirely by hydrotherapy. In case the fever becomes too high and you wish it reduced, you may give three grains of quinine, which will usually lower the temperature one or two degrees and allow the patient to continue with the malaria after having a brief rest. Do not give over three grains. We have given five grains of quinine on several occasions, and this small amount has completely rid the peripheral circulation of all malarial parasites. It is necessary during the entire course of the malaria to constantly make blood smears in order to determine the number of parasites in peripheral circulation. This will give you more information as to the severity of the infection and the patient's resistance than any other laboratory work. A thin smear of blood is made—what we mean by a thin smear is one which has from fifty to seventy-five red blood cells to a field. The average case of malaria will have two to three malarial parasites to a field. If there is any increase over this amount, the patient should be given a small dose of quinine immediately, and the blood constantly examined to be sure that the parasites are not increased in the peripheral circulation over the amount above mentioned. It sometimes happens that during the course of the malaria the patients apparently will be getting along very nicely and will not present any symptoms which would indicate that they are about to break under the strain. Constantly checking the number of parasites in the blood will be your first warning; and in case of a sudden increase, if noted early and sufficient amount of quinine is given to control this, you can avoid coma and

some of the other more dangerous complications. There is another condition which sometimes arises that will give considerable trouble—that is nausea and vomiting. This may be very persistent; and if the individual is not able to retain any food or water for forty-eight hours, the malaria should be terminated, giving quinine subcutaneously.

#### 5. Termination of the Malaria.

The standard treatment which we use is ten grains of quinine three times a day for three or four days, then ten grains of quinine every night for eight weeks. The U. S. Public Service reports twenty per cent relapses from this treatment. Our relapses at the S. C. State Hospital have been somewhat higher—thirty per cent. Some of these malarial cases will recover spontaneously—fifty-three had spontaneous recoveries; they had no treatment following, and there were two relapses. There were fifty-six cases treated with atebrine. There were five relapses, 8.9 per cent. During the course of the quinine therapy, the patient is given each week one dose of neoarsphenamine and one of bismuth. This is continued until six doses are given.

#### 6. Prognosis.

It is wise to acquaint the relatives of patients with the possibilities involved in the course of treatment. We tell them frankly that we are dealing with a chronic disease of the central nervous system and that the previous treatment for this condition has been very unsatisfactory, and that the malaria treatment is not any longer in the experimental stage; however, it cannot be said that it is entirely without danger, because some few patients suffering with this disease are going to react badly, regardless of what treatment is given. We can never tell how extensive the ulceration of the brain may be, and for this reason we cannot say which cases will be improved by the inoculation. We do not entertain any great fear as to the probable outcome; and, to be perfectly frank, the treatment in some instances seems to hasten the end. At the present this is the only remedy that seems to offer any hope of a cure, and personally if I had the disease I would want to take the treatment. There is nothing in the symptoms or the serological findings that will indicate which cases will respond to treatment



and which ones will not. There is only one thing to do—give the treatment and hope for the best. The statistics up to the present date show about 30 per cent who make a social recovery—that is, they will be able to go back and resume their former station in life. About 30 per cent will be arrested and the others will show no improvement, and the disease will run its usual course. There is one thing that malarial treatment usually does even when it does not benefit the patient mentally; it will prevent that bedridden stage when bed sores develop and the patient lives a vegetative existence. It is seldom now that we see a case which reaches this point, while in former years

we always had quite a number in this particular stage. If it did not do more than this, I feel that it has accomplished a great deal. Improvement sometimes takes place during the course of the treatment or immediately following it; but improvement sometimes takes place as late as six months after the treatment has been completed, and therefore, before saying that the treatment has been of no avail, a six months period should elapse. In view of the results which have been obtained from this method of therapy, it is felt every case of neurosyphilis when contra-indications do not exist should be given the opportunity of having this treatment.

#### RIDGE MEDICAL SOCIETY

The Ridge Medical Society met the nineteenth of August at six o'clock in the evening in the hospitable home of Dr. and Mrs. E. C. Ridgell, where an excellent and varied supper was served by the Ladies Auxiliary.

The attendance wasn't quite as large as usual.

Drs. W. W. King and R. H. Timmerman made short reports of their observations and experiences at the pediatric seminar in Saluda, N. C.

Dr. W. P. Timmerman exhibited a healthy well developed baby with seven well developed toes on its left foot.

Dr. Wm. Weston, Sr. of Columbia in his usual forceful and inspiring manner made an interesting and instructive talk on foods.

At the conclusion of his address he was persuaded to talk again.

He later made an address to The Ladies Auxiliary which was highly appreciated and enjoyed.

A unanimous vote of thanks and appreciation was extended to Dr. Weston for his excellent addresses and to The Ladies Auxiliary for their excellent supper and entertainment.

The feast, meeting, etc. were to be held on

Dr. and Mrs. Ridgell's beautiful lawn but owing to the inclement weather it was held in their elegant home.

Since our meeting Dr. E. C. Ridgell, one of our best and most outstanding citizens and enthusiastic member of our society died suddenly in his home.

He also was an active, enthusiastic churchman.

We deeply regret his passing.

D. B. Frontis, M.D.,  
President Pro Tem.  
W. P. Timmerman,  
Secretary.

#### EDISTO MEDICAL SOCIETY

The Edisto Medical Society held its regular meeting Wednesday, August 28, 1935 at 2:00 P. M. at the Eutaw Hotel.

Dr. F. A. Hoshall, Professor of Orthopedic Surgery at the Medical College of the State of S. C., Charleston, S. C. read a paper on "Injuries About the Elbow Joint."

Dr. John M. Van de Erve, Dermatologist, Charleston, S. C., read a paper on "Acne."

H. M. Eargle, Secretary,  
Edisto Medical Society.

# THE JOURNAL

OF THE

## South Carolina Medical Association

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SEPTEMBER, 1935

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### PIEDMONT POST GRADUATE CLINICAL ASSEMBLY A GREAT SUCCESS

Graduate medical education has come to stay in South Carolina, it is believed, as the trend seems to be irresistible in most other states. The type most applicable for us at present appears to be that fostered by organized medicine through the various constituent societies. We are fortunate in having a State Medical College to call on for sympathetic assistance at

any time. In other words, some form of extension graduate teaching is the most practical plan for South Carolina if all of the doctors are to be reached. The three day clinical assembly at Anderson, September 3, 4, 5, had an enthusiastic attendance of more than one hundred. If this can be done in the Piedmont, there is no reason why it cannot be repeated in other sections of the State. The officers of the Anderson Clinical Assembly were reelected and the next Assembly will be held at the same place.

### CONFERENCE OF STATE SECRETARIES AND EDITORS

One of the most important meetings in organization circles in American medicine is that of the Annual get together of the Secretaries of State Medical Societies and the Editors of State Journals in Chicago, where the Headquarters of the A. M. A. are located. This year the meeting will be held November 15, 16. The Presidents of State Societies are always invited and often add tremendous interest to the meetings. State Medical Journals at the present time compare favorably with medical journals in any part of the world. In America the major part of scientific contributions are presented through the State Journals. These Journals, however, have their problems, and an annual conference of Editors proves to be invaluable. Many of the Editors are also Secretaries of their respective State Societies and thus they have dual problems at such a conference. It is highly important that these conferences be well attended by as many of the officers of State Societies as possible. Here each year we meet with the Board of Trustees of the American Medical Association as well as the officers of the A. M. A. Important announcements of future policies of organized medicine are always discussed. At the present time one of the most vital subjects is that of the relationship of the government to the practice of medicine. It is therefore one of the most potential meetings of the year, for in order that solidarity of effort may be successful a clear cut general understanding must be agreed upon by the men who edit the State Journals or head the State Medical organizations.



## THE STATE BOARD OF HEALTH

The Executive Committee of the State Board of Health met at Columbia, September 11 and was presided over by Dr. F. M. Routh, recently elected Chairman of the Board. Dr. Kenneth M. Lynch of Charleston and Dr. Walter R. Mead of Florence are the new members of the Board. Much routine business was attended to and a general consideration of the enlarging duties of the Board. It is clear that an enormous expansion of public health activities is in the offing when the funds from the Federal Government for the States become available. It is fortunate that in South Carolina under the law the State Board of Health is the South Carolina Medical Association and the Executive Committee the creature of the Association. This brings about a cooperation from a legal standpoint vouchsafed by few other states. This enables the profession of South Carolina to keep in close touch with all public health measures. It is highly important that the actual practice of medicine of a curative type be kept inviolate from the encroachments of public health measures as a general proposition. In South Carolina strong efforts are made to this end. It is not inconceivable that the private practitioner in this State may in his own office take over much of preventive medicine both to the profit of his clientele and to himself. This should logically lead to a curtailment of public health activities as now constituted rather than an extension. To accomplish this end, however, to the fullest extent it may be that another generation of doctors will have to grow up, coming out of

the schools with a different viewpoint of the relationship of preventive medicine and curative medicine. The Medical College of the State of South Carolina has been a pioneer of teaching public health to its students. Other schools have followed in rapid succession.

As the State Board of Health enters upon the fall work, one is impressed with their desire to give the public the very best service within their power and to cooperate with the medical profession of South Carolina to the best of their ability.

THE FOURTH DISTRICT SOCIETY MEETS AT  
GAFFNEY, 4 P. M., OCTOBER 15

One of the largest District Societies in the South is the Fourth District. It has a membership of about 200 and an attendance of about one hundred every year. Dr. George R. Wilkinson of Greenville, Secretary, has sent out a call for volunteer papers. In the scheme of organized medicine in America the District Society is a very important place for real scientific presentations to be made. No time is taken up with routine business matters. Then there is the social feature, such as the luncheons, where the members are able to meet each other and exchange experiences. In every part of the State nearly every doctor is able to attend to some of his practice and the District meeting all the same day. The State Medical Association profits very significantly by the scientific atmosphere created at the District meetings. We bespeak a full attendance at Gaffney, for the programs never fail to be of vital interest.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE  
STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 290 (25144), April 12, 1935  
*Service of Dr. Chamberlain*

Student Robertson (presenting case history):

Negro male, age 32 years, stevedore, admitted Aug. 4, 1934, discharged Aug. 17, 1934, diagnosis: "Gastroenteritis; Lesion of Chest Wall." Readmitted Nov. 12, 1934, died Feb. 11, 1935.

*Chief Complaint:* Nausea, vomiting, pains in abdomen.

*History:* Says he has had nausea and vomiting for only ten days, but the same symptoms were given on the previous admission, with diarrhoea. The abdominal pain is griping in character, generalized throughout abdomen. Thinks he has had several chills, but denies fever. Draining sinuses on chest wall for 1 year, apparently following injury. Has lost much weight and has become very weak. No hematemesis. Family History: "No history of tuberculosis." Previous History: denies all but whooping cough and malaria (1930). Systems: No cough, no pain in chest. Occasional dyspnoea when walking. Diet: beef, hominy or rice for breakfast, no dinner, greens and rice for supper. Denies use of alcohol.

*Examination:* Very thin, in some pain and "chilled". Temp. 97.2, pulse 96, resp. 24, B.P. 75-50. Skin dry and almost scaly, m.m. of good color. Sclerae pigmented and slightly injected. Tonsils moderately inflamed. "Hard discrete post-cervical glands on left side." Thyroid not palpable. Chest: Fairly well developed. Two chronically discharging sores are noted on anterior chest, one along second intercostal space on right, the other, about the size of a quarter, in 4th left interspace just lateral to sternal border. Those are crater-like with a granulating center. Pressure over the sternum gives a bloody purulent discharge from the lower lesion. Lungs apparently normal. Heart: Apex beat in 6th interspace 2 1-2 inches from midline. Sounds loud and strong, regular in rate and rhythm. No murmurs of friction rubs. Radial pulse very weak. No

palpable arterial thickening. Abdomen: scaphoid. Some tenderness about umbilicus. No organs or masses palpated. Reflexes hypoaactive. No abnormal reflexes.

*Laboratory:* Urine—Sp. Gr. 1020-1016, alb. 1 plus-0, hyaline casts 1 plus. Blood: Hb. 95-80 per cent D; RBC 4,240,000; WBC 13,100-6,000; lymphos 62-45 per cent; polys 21-45 per cent; large monos 16-5; eosinos 1-3; basos 0-2 per cent. Appearance of erythrocytes relatively normal. Feces: occult blood 4 plus, 3 plus, otherwise negative. Spinal fluid (11/14): 13 cells per cu. mm., lymphocytes predominating; globulin and sugar "negative." Blood and spinal fluid Wassermann neg. Test meal (alcohol) free HCl 9, 5, 11; other elements normal. Sputum: no t.b. X-Rays of chest, sternum and g-i tract: see chart. Mantoux 3 plus. Culture of fluid from sinuses showed staphylococci present. No fungi present in smear. Culture of feces for t.b. negative.

*Course:* Temp. showed a low-grade daily rise, seldom above 100, frequently remaining normal for some time. Pulse slightly more rapid in proportion to temperature, generally following the same course. Respirations 18-24 during entire stay. No remarkable change in condition occurred during hospital stay. Was given a try on small doses of neoarsphenamine, without effect on the sinus tracts or general condition. Gradually became weaker, tending to be stuporous towards the end. Died Feb. 11, 1935 at 5:45 A. M.

Dr. Chamberlain (conducting): Mr. Barr, will you open the discussion?

Student Barr: We have here a negro male, who, on both hospital admissions complained of nausea, vomiting, diarrhoea and griping pains in the abdomen, so that on the first admission a diagnosis of gastro-enteritis was made. He was quite emaciated, his temperature was subnormal and his blood pressure very low. Pigmented sclerae were noted on his second admission. There was apparently some bleeding from the gastro-intestinal tract, altho we do



not know the circumstances under which this stool examination was taken, and hence cannot say if meat had been excluded from the diet. The blood count showed a lymphocytosis. The whole picture rather suggests a tuberculosis, but whether primary in the intestinal tract or in the lungs I cannot say. There were no positive findings in the chest. To come back to the pigmentation: was any other abnormal pigmentation noted than in the sclerae?

Dr. Chamberlain: He was very heavily pigmented all over, a very dark-skinned negro.

Student Barr: I would like to see his X-rays.

Dr. Chamberlain (demonstrating X-rays): The only positive X-ray finding was an indefinite clouding in the upper portion of the right chest, and whether this indicated lung disease or corresponded with the lesion in the chest wall, the x-ray did not show. The clouding was in the region of the articulation of the upper ribs on the left with the sternum, as you can see here. The reontgenologist, after being informed of the condition in the chest wall, doubted that the tissue change accounting for the shadows noted was in the lung itself. The third chest film, taken December, gave the same impression.

Student Barr: With the blood count, the continued low-grade fever, and the progressive weakness, we must think of tuberculosis, probably generalized. The symptoms of marked weakness and asthenia and the definite hypotension, suggest very strongly the syndrome known as Addison's disease, especially when occurring, as they are here, in an individual already suspected of being tubercular. Generalized glandular enlargement is frequently found in this clinical syndrome; in this case, there was no generalized enlargement of the lymph glands, but a number were palpated in the neck. Abnormal pigmentation was not noted in the skin or mucous membranes of this man, but I imagine that such an observation would be very unreliable in one of his race. The sclerae are pigmented.

Dr. Chamberlain: And I suppose the fistulous tracts on the chest suggest bone tuberculosis. Mr. Dusenberry, will you continue?

Student Dusenberry: I agree with the diagnosis of Addison's disease, especially because of the hypotension. The gastro-intestinal symp-

toms could be those associated with most cases of Addison's disease, or they could be an actual tuberculosis enteritis. I do not believe that we can say that there is a generalized tuberculosis, as no findings could be detected in the chest, by x-ray or otherwise, and the fever curve and the blood counts do not suggest a very active tuberculosis infection. The location of the apex of the heart in this case is rather unusual; the heart does not appear to be enlarged, but possibly somewhat displaced. This suggests an inflammatory condition in the mediastinum, and would probably be in association with tuberculous lymph glands in the mediastinum, or with the same process that produced the sinus tracts, whatever that may be. But I believe that tuberculosis of the adrenal glands is the important thing.

Dr. Chamberlain: Mr. King (D.I.C.) what do you think of the sinuses in the anterior chest wall.

Student King: I believe that these sinuses lead to a tuberculous infection somewhere in the chest, probably in the glands of the mediastinum, probably passing directly thru the sternum.

Dr. Chamberlain: Mr. Lemkin, what do you think of the low hydrochloric acid content of the gastric secretions?

Student Lemkin: I don't know how to explain that. As regards the rest of the case, I think that an old staphylococcus infection of the sternum and ribs should be considered. There is a rather definite history of injury to the chest wall, and staphylococci were recovered on culture. And the abdominal symptoms are so prominent that I believe he must have had a tuberculous enteritis.

Dr. Chamberlain: Do you believe that the gastro-intestinal X-ray studies can rule out a tuberculous enteritis?

Student Lemkin: The X-ray would probably detect a large ulceration, but a small lesion could easily be overlooked. I believe that his condition was tuberculous, and that he had Addison's disease.

Student McNulty: I think that the possibility of a malignant neoplasm should be considered here. If either a primary or a metastatic tumor involved the adrenal cortex, the symptoms of Addison's disease might be seen,

as well as with tuberculosis. I know the outcome in this case, but if I had the case on the ward I believe that I would suspect a malignant tumor.

Dr. Chamberlain: It seems that the senior students are better advised on this case than the visiting physicians were. The autopsy must have been a very striking one, for everyone to remember the findings so well. The consulting dermatologist (Dr. Ball) thought the condition was a tuberculous osteomyelitis, with the sinus tracts resulting from this condition. While he was in the hospital, all the attention was focussed on the lesions of the chest wall, and the general asthenia, while recorded on the chart, was not given especial attention.

Dr. Prioleau: Regarding the sinuses: when these are seen about the sterno-clavicular joint, they are frequently syphilitic as well as tuberculous.

Dr. Johnson: The lowered hydrochloric acid in the gastric juice has been commented on. I can see no special explanation for it in this case; it is probably related to the general asthenia.

Dr. Lynch: In 1855 Addison described the condition now bearing his name, and this initial record of adrenal insufficiency as given by Addison is the beginning of our knowledge of the endocrine complexes. Nothing of material importance has been added to his original clinical conception, except that the "feeble circulation," as he described it, is now recorded by the sphygmomanometer as a hypotension.

The naturally pigmented state of this man's skin is doubtless the reason that the correct diagnosis was not made during life. This pigmentation is usually the striking symptom and finding in such cases, altho the general asthenia is almost as striking. The emphasis placed upon the pigmentation noted in the sclerae is subject to question, as that is a very common finding in all negroes, especially the very dark-skinned ones.

The upper skin sinus of the chest wall communicated with an irregular punched-out tuberculous area in the sternum. Beneath this sternal lesion the superficial mediastinal tissues were heavily infiltrated. The thymus was included in the post-sternal mass when it was removed, and could be recognized only by the

microscopic sections. It was definitely hyperactive, and that finding is a very common one in association with extensive destruction of the suprarenals.

The lungs showed a marked fibrosis of the pleural surfaces, with dense adhesions about the anterior mediastinum and the apex of the lung. There was no definite open cavity in the lungs, but there were several encapsulated caseous areas which might well have been small cavities at one time. These were manifest grossly in the posterior aspect of the right upper lobe as surface scars. The lungs were quite heavily fibrous thruout, with smaller and more active tuberculous areas occasionally evident. There was also a very heavy dust deposit thruout the lungs, with a large number of the small bodies usually thought to be pathognomonic of asbestosis. Upon questioning his relatives after death it was learned that he never worked in asbestos, but that he had been employed for some time in a coal shute.

There were small, scattered, relatively inactive tubercles in the spleen, lymph nodes and liver.

The suprarenal glands showed large areas of caseation necrosis, with practically complete obliteration of the glands, so that they were recognized with great difficulty in the microscopic studies. This disease of the supra-renal glands is the background for the syndrome of Addison's disease in this case, and tuberculosis of these glands is said to be the pathological lesion in about 80-90 per cent of the cases, others being due to primary or metastatic new-growths there, or to other destructive lesions of the suprarenal. While this is well-recognized as the essential lesion in the syndrome, still we are no nearer the actual endocrine explanation of the gastro-intestinal symptoms, the skin pigmentation, the hypotension and asthenia than Addison was in 1855. Addison thought the skin pigmentation was due to a "defect of the coloring matter in these parts," the metabolic control of which he suspected to reside in the adrenal. That is still the present concept.

Now we know that humans cannot live without the cortex of the adrenal gland, and with the very recent addition of cortical suprarenal extracts to the therapy of the disease, cures or at least arrests are affected. This represents our



only advance in the understanding of the condition since Addison's classical monograph.

Acute adrenal insufficiency also occurs, usually due to infarction, abscesses or hemorrhage. Addison recognized these acute conditions, but

apparently did not note that pigmentation is apt to be absent in the earlier cases.

There was no intrinsic lesion of the gastrointestinal tract, and the bowel contained no grossly recognizable blood.

## EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

### SIMPLIFIED MANAGEMENT OF AFTER-CATARACT—DR. D. T. ATKINSON

One of the big drawbacks to the conclusion of the case in a cataract operation is the secondary cataract.

"The most probable cause of the problem, however, is that the disintegrating effect of the aqueous humor changes the character of the capsule."

'Parts of a new lens grow from minute parts to lens tissue adherent to the capsule.' I have found that Thyroxine aids in dissolving these opacities; as it also does in the next heading.

'A soft lens cortex with much lens remaining increases the per cent of secondary cataract, especially if much lens matter has been left in the anterior chamber.'

The great difficulty to the cure of this trouble is from the opposite problems, one is that "the secondary cataract moves with the needle knife and is not cut," and the other is that the secondary cataract lacks elasticity and when cut does not gape.

"The double knife needle aids in solving these troubles, 'but is hard to use.' Other means of treatment are the incising and removing of parts of the cataract. V shaped incision in the capsule, or openings in the capsule by punch forceps." This I think would be hard to do, but to catch and twist the capsule on a special straight forceps is easier and often efficacious.

Dr. Atkinson says that only three methods have stood the test of experience. (a) The single needle or narrow knife operation; (b) the operation with the double needle; (c) the extraction of all or part of the capsule together with the adherent iris if the pupil is agglutinated.

The objections and advantages of the single needle operation are known to all who have used it.

The objection of the double needle operation is in small hospitals that one lacks the trained assistant to steady the eye.

In the removal of parts of the secondary cataract catch the cataract as far from the incision as possible and remove it by elevating the blades of the forceps. In thus doing there is less injury to the ciliary body than if direct traction is made on the capsule. Or the capsule and iris may be cut with scissors and removed and clipped off.

Dr. Atkinson then describes a new method that he has found successful. It is:

"Presuming that the operation is to be done on the left eye, a von Graefe knife blade downward is inserted through the cornea three millimeters from the limbus and at a point corresponding to two o'clock on the clock dial. The knife, carried inward, penetrates the iris at the junction of its outer and middle third. The handle of the knife is then depressed and its point is made to emerge into the anterior chamber at the opposite side, at a corresponding point in the iris at which it entered. The tip of the knife is now passed outward through the cornea, emerging three millimeters from the limbus at a point corresponding to ten o'clock on the clock dial. This section is then carried downward, the knife being given a to and fro movement as it cuts. Soon the taut iris engaged by the knife gives way, its elasticity causing the incision in the iris to gape, thus creating a permanent pupil. This will occur before the corneal section, while being carried downward, gets much beyond what would correspond to points represented by three and nine on the clock dial. The knife is then withdrawn."

## SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

### "THE DIAGNOSIS AND TREATMENT OF ACUTE INJURIES TO THE HEAD"

This is a partial review of an article by Dr. Walter Dandy of Baltimore published in the J. A. M. A. September 2, 1933.

In a previous issue the diagnosis has been discussed and in this issue the treatment will be considered.

If the skin is broken, the wound should be cleansed and the devitalized tissue excised—if the condition of the patient permits—so as to prevent infection, which otherwise would almost certainly follow. X-Ray examination should not be made until it is certain that the condition of shock is over and life is safe. It is a severe tax upon a critically ill patient and it offers little as regards diagnosis and indications for treatment except in depressed fractures, and even here it is not indispensable.

Haemorrhage and edema follow injury to the brain. The result is increased intracranial pressure. In only one type of case can the cause of the increased pressure be removed—that is in extra-dural hemorrhage. In all other cases the effect of the injury—increased pressure—must be treated. The treatment for extra-dural hemorrhage consists in evacuating the haematoma and ligating the bleeding artery. In these cases it is important that the diagnosis be made early so that this life saving procedure may be instituted. While not pathognomonic, a very good indication of this condition is a lucid interval between the immediate shock and the deepening coma one-half to several hours later. An additional sign is a motor weakness beginning in the face on the opposite side and extending to the arm and to the leg.

In the treatment of increased intracranial pressure lumbar puncture is decided as both useless and harmful. It results in trauma to the brain. The immediate apparently beneficial effect is followed by a deeper state of coma. In the case of a subdural or extradural haemorrhage, lumbar puncture, by relieving pressure, gives the haemorrhage more room to extend and results in stripping more branches of the

middle meningeal artery. The author is positive that no case has been saved by this procedure, and that a number of cases have been lost which otherwise might have been saved.

The injections of hypertonic solutions in order to lower pressure are placed in the same category. There is an apparent immediate benefit, but the adverse chemical reactions following such an injection result in an increased pressure.

The only treatment recommended up to a certain point is absolute rest. Seventy (70 per cent) per cent of all cases with severe head injuries will recover spontaneously. If left alone the remaining thirty (30 per cent) per cent will die. From this group one third can be saved by subtemporal decompression if well timed and properly performed. The remaining twenty (20 per cent) per cent are beyond redemption. If a patient dies within the first five or six hours, there is no possibility of saving him by an operation—the one exception being an extradural haemorrhage. It at the end of five or six hours consciousness improves or remains unchanged, and the pulse, respiration and temperature remain within the limits of compensation, the chances of a spontaneous recovery are good. If after this arbitrary period coma deepens and other signs indicate a break in compensation, recovery is practically impossible except by constant relief of pressure. This can be accomplished only by subtemporal decompression, which should be done under local anesthesia.

In brief, the treatment recommended is to keep the patient quiet and do the least possible in the way of active treatment, avoiding in particular roentgen examination, lumbar puncture, and intravenous injection of hypertonic solutions. The patient should be carefully and constantly watched for signs of a break in compensation due to increased intracranial pressure and when necessary, there should be done a right subtemporal decompression. An extradural haemorrhage should be watched for and when diagnosed, relieved by operation.



## SOCIETY REPORTS

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### ANDERSON COUNTY MEDICAL ASSOCIATION RESOLUTIONS, DR. SAMUEL CLARENCE DEAN

"Know you not that a prince and a great man has fallen this day in Israel?"

There is no one in this community who has not been made aware of Dr. Dean's death. The press has heard the news of his passing, we have seen the beautiful floral tributes that loving friends have sent to honor his memory; we have heard the ministry as they attempted to comfort the bereaved family as they performed the last sad rights of all that remained of his mortal body. Yet in spite of all this indisputable evidence of his passing it is difficult for those of us who were closely associated with him to realize that he who fought the last great enemy so courageously has himself been pierced thru the heart with a dart.

We feel greatly honored that this society has made us their spokesman on this occasion and commissioned us to prepare a suitable tribute to his memory. In attempting to discharge this obligation we are overwhelmed with the inadequacy and the futility of words. What more can we possibly say that those who knew Dr. Dean do not already know or what tribute of words could possibly do justice to his life. In the presence of this mysterious dispensation of providence we are dumb and for the expression of our feelings and emotions we have no language but a cry. In the fewest and simplest words we wish to bear testimony of our respect, our admiration, our love for Dr. Dean.

Dr. Dean lived so intensely, he was so vibrantly alive that it is most difficult to think of him in terms of one who has been. He had not lived out his allotted span of life, age had not bowed his form, nor slowed his steps, nor robbed him of the joy of living. Disease had not palsied his hands or depleted his inexhaustable supply of energy. He was in the zenith of his usefulness and service. With dramatic swiftness the column was broken in its strength, his sun went down at noon tide and as he passed from vibrant living to the in-

action of death. Such dispensation of providences are beyond our understanding. In his passing the profession has lost an outstanding leader, the community has lost a valued public citizen, and we have lost a friend.

His life is not to be measured by its strength but by breadth and in the broad field of endeavor he accomplished more in his short life than most of us who have lived much longer. He crowned in each days life more of actual living than most men ever knew.

Let us not think of him as one who has been called away before he had time to complete his work but rather as one who has quickly and gloriously finished his allotted task.

Dr. Dean possessed the three requisites of a good physician, he had knowledge, he had the powers to observe and he kept an open mind. While he excelled in surgery he was a good physician before he was a good surgeon. Dr. Dean loved his work, it was his master and the joy of his life to watch the success of his work, to all his patients he gave freely and profligately of his time and energy. No task was too small to merit his painstaking care and none too difficult or hopeless to deter him from rendering all assistance our profession had to offer. He was not to be rushed into operating by the wishes and opinions of others, but must be assured for himself that an operation held out a reasonable hope of relief. In operating he made no effort at speed or display but concentrated all his energies on the safety and welfare of his patients. He was thorough yet conservative. He was a good surgeon and will be greatly missed in his community.

Dr. Dean was so unassuming, so modest, so free from professionalism, that now we have lost him we are just beginning to recognize his true worth. He was friendly to all but familiar with none. He neither knew or practiced any of the tricks of the trade. He had no sales talk but depended upon the merit of his work to sell his services. His code was fair competition and the golden rule was the rule of his life. These lived by, at times to his own detriment. When Dr. Dean located in Anderson he had no

pull but his pleasing personality, his determination, his willingness to work, and his attention to the so called small things carried him far as a surgeon and if his life had been spared he would have gone much farther but death cut his useful career short.

The medical profession of this community takes this occasion to salute the memory of Dr. Samuel Clarence Dean, a good physician, a skilled surgeon, a valuable citizen and an all around good fellow. Pax Vobis Cum.

Committee,

Anderson County Medical Society.

P. S. Read before Anderson County Medical Society, July 10, 1935. For publication in South Carolina Medical Journal.

## COLUMBIA MEDICAL SOCIETY

Crystal Room, Columbia Hotel, Monday, September 9, 1935 at 8:30 P. M.

*Regular Scientific Meeting, Program—*

1. "Hyperthyroidism", Dr. Geo. T. McCutchen.

2. "Pulmonary Aneurism"—Case Report by Dr. L. E. Madden.

O. B. Mayer, M.D.,  
President.

Benj. Rubinowitz, M.D.,  
Secretary.

## BOOK REVIEWS

EMOTIONS AND BODILY CHANGES, A SURVEY OF LITERATURE ON PSYCHOSOMATIC INTERRELATIONSHIPS, 1910-1923, by H. Flanders Dunbar, M.D., Ph.D., Departments of Medicine and Psychiatry, Columbia University. Published for the Josiah Macy, Jr., Foundation, by Columbia University Press, New York, 1935.

Introduction

Part One: Orientation and Methodology

I. Problem of Integration and Differentiation.

II. Problems of Acute and Chronic Illness.

III. Problem of Measurement.

Part Two: Organs or Organ-Systems

IV. General Considerations Relating to Organs or Organ Systems.

V. Nervous System.

VI. Musculature.

VII. Endocrines.

VIII. General Metabolism and Heat Regulation.

IX. Cardiovascular System.

X. Respiratory System, Including Oto-Rhino-Laryngology.

XI. Gastrointestinal System.

XII. Genitourinary System and Gynecology.

XIII. Special Sense Organs Exclusive of Skin.

XIV. Skin.

XV. Bones, Including Odontology.

Part Three: Therapeutic Considerations and Concluding Remarks

XVI. Therapeutic Considerations.

XVII. Conclusion.

Bibliography.

Index.

Every doctor has frequent cause to observe the effect of the emotions on his patients from day to day. This book describes these effects in considerable detail. Many case histories have been presented. A chapter is devoted to therapeutic considerations though this is very short. Perhaps our knowledge is quite limited along this line as yet. One is impressed by the extraordinary scope of the bibliography. One hundred and twenty four pages of the entire 595 pages have been devoted to this. One fourth of the book about. Perhaps it is well to have in one place such extensive references but it is rare to find a volume of this size devoting so much space to it.



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# THE JOURNAL

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### JAUNDICE: ITS DIFFERENTIAL DIAGNOSIS

By

THOMAS M. PEERY, M.D.  
Charleston, S. C.

In recent years a great deal of research, both clinical and experimental, has been done in the field of the normal and pathological physiology of bilirubin and related substances, but the lessons thus learned have not been fully applied to the diagnosis of the different clinical types of jaundice.

The work of Aschoff(1) and his students on the reticuloendothelial system, of Whipple(2) and his associates on the interrelationships of liver and spleen, and, most important of all, of van den Bergh(3) (1913 et seq.), have added greatly to our knowledge. Van den Bergh's introduction of the test which bears his name has given the clinician a relatively simple laboratory procedure of tremendous value, and this test, when coupled with examinations of the urine and feces for bile, and with complete blood studies, gives a definite guide to follow in the handling of cases of jaundice.

Before going into the clinical aspects of the problem it would be well to delve briefly into the metabolism of bilirubin from its precursor, hemoglobin. The normal life of the red blood cell is thought to be about 30 days(4), at the end of which time it undergoes spontaneous fragmentation. These red cell fragments are then taken up by the various cells throughout the body which collectively are referred to as the reticulo-endothelial system. In humans the most important depot of these cells is the spleen, with less important collections in the liver (Kupffer

cells), bone marrow, lymph glands and circulating blood. Aschoff and other workers have shown that bilirubin is formed by these cells from hemoglobin without any activity on the part of the liver. This bilirubin is released into the blood stream where it can be detected by the various clinical methods. It will remain in the circulating blood until eliminated by the kidneys or the liver.

In this connection it is worth while to review the structure of the liver lobule as illustrated by McNee's(5) excellent diagram. The liver cells are seen to compose a test-tube-like structure whose rounded end abutts the central vein and whose open end empties into the bile capillaries whence bile is carried into the larger biliary channels. The portal vein and the hepatic arteries send their fine branches between these tubes, forming the imperfectly lined liver sinuses which allow the blood to come into intimate contact with the liver cells.

As the circulating bilirubin reaches the liver, it is taken up by the liver cells and altered in some manner before being passed into the biliary system.

Thus we have two kinds of bilirubin: that kind normally circulating in the blood in very small quantities from red cell destruction, and the altered kind of bilirubin ("bile bilirubin") formed after passage through the liver cells. It is readily seen that the first form will be present in the blood in excess in cases of excessive blood hemolysis or in cases of liver damage, when the liver cells may be unable to convert it into the altered "bile bilirubin." The second form ("bile bilirubin") will be present in the blood only in cases in which there is obstruction to the biliary passages, with regurgitation of "bile bilirubin" into the blood stream. Either form,

From the Department of Pathology, Medical College of the State of South Carolina.



when present in the blood in excess, will produce the clinical state of jaundice.

It is in the differentiation of these types of jaundice that the van den Bergh test has its application. The addition of Ehrlich's diazo reagent directly to the diluted blood serum will give an immediately positive reaction, occurring within thirty seconds, when bile bilirubin is present, and this is the result obtained uniformly in obstructive jaundice (van den Bergh's direct immediate reaction). On the other hand, when unaltered bilirubin is present in the blood serum, the reaction will be delayed and not apparent for at least a minute, or possibly a positive reaction will be obtained only on the addition of alcohol (van den Bergh's delayed direct or indirect reaction).

It will be seen, on the basis of these statements, that jaundice can "be due to an increased production of bile pigment from hemoglobin (undue hemolysis) as a result of which so much pigment is presented to the liver cells that they are unable to excrete it and it remains in the blood. Or it may be due to the resorption of (bile) bilirubin which passes in normal amount through the liver cells, but which is unable to escape on account of obstruction of the bile passages." (6)

There is a third alternative commonly met with. An immediate direct reaction may deepen on standing, giving what is known as a biphasic reaction. This is due to an excess of both unaltered (hemolytic) bilirubin and of altered (bile) bilirubin in the blood. This biphasic reaction is given in toxic or inflammatory conditions of the liver cells, where the swollen cells refuse passage to hemolytic bilirubin and at the same time cause some obstruction to smaller biliary radicles. The various poisons that give known liver damage (chloroform, arsenic, phosphorus, etc.) usually give this type of reaction, as does acute yellow atrophy of the liver.

Those cases of jaundice due to excessive blood hemolysis or to direct liver cell damage constitute the cases of jaundice to be treated medically in large measure. While these cases frequently give diagnostic difficulties, they can usually be differentiated by careful clinical analysis. The history of familial jaundice is of great importance. Careful inquiry into ex-

posure to medicinal or occupational poisons must always be made. Physical examination may show an increase or a decrease in the size of the liver, the presence of ascites or a palpable spleen. Blood studies may show the presence of one of the primary anemias or of the malarial parasite.

When the determination of the type of "medical" jaundice is satisfactorily reached, the course of therapy is usually easy in so far as we can go. As congenital hemolytic jaundice is presumably due to increased fragility of the red blood cells and their excessive destruction by the reticulo-endothelial system, splenectomy is frequently resorted to. It is a logical and usually a satisfactory method of treatment, but unfortunately its effects are frequently not permanent, as the other reticulo-endothelial depots throughout the body frequently hypertrophy, with a recurrence of symptoms, although usually less severe.

Other hemolytic forms of jaundice, as that of pernicious anemia, chronic malaria, snake venom poisoning, respond satisfactorily to therapy aimed at the etiological agent.

In that group of diseases where direct liver cell damage is the important factor, as acute or subacute yellow atrophy of the liver, poisoning by mushrooms, chloroform, phosphorus, etc., the important part of the treatment is "fortification" of the liver by ample carbohydrates, as recently pointed out by Ottenberg (7). It has been shown experimentally by Whipple (8) and others that large quantities of glycogen in the liver lessen the likelihood and severity of liver damage when exposed to toxic agents. Clinical experience has shown that carbohydrate feeding is good. In severe cases it is usually necessary to give glucose by vein, in less severe cases carbohydrate may be administered as candies, orange juices or starches. As much as 500 gms. of carbohydrate should be given daily where possible, and insulin should be used to insure utilization. Protein and fat intake should be cut down as low as possible, thus lessening the work load of the liver, but the protein intake should not be below the minimum body requirement, which is usually estimated at about 1 gm. daily per kilo body weight.

Those cases giving the positive direct van

den Bergh reaction constitute the group known as obstructive jaundice, and it is this group that frequently requires surgery for relief. The commonest factor causing obstruction is probably calculus in the hepatic or common bile duct. Such a stone is much less apt to give pain than is one in the cystic duct, because the common duct, containing practically no muscle fibres, is unable to go into painful spasmodic contractions. Obstruction by stone is commonly incomplete or intermittent, and therefore the bile content (and the color) of the stools frequently varies from day to day. The depth of jaundice in the skin may also vary considerably, but it is much more satisfactory to rely on frequent quantitative determinations of blood serum bilirubin, as by the icterus index or the quantitative van den Bergh. Other conditions producing obstructive jaundice seldom show such variation. Since obstruction of the biliary duct prevents the elimination of other substances excreted by the liver, notably cholesterol, determinations of these substances in the blood are also of value, as their concentration likewise varies with the degree and constancy of the obstruction.

The clinical picture of the usual case of carcinoma of the head of the pancreas with obstructive jaundice is well known: slowly progressive painless jaundice, usually in an elderly individual.

Other conditions such as cysts, aneurysms, promary and metastatic tumors occasionally cause obstructive jaundice, but they are not to be discussed here.

Once a diagnosis of obstructive jaundice has been made by a careful analysis of the data at hand, the individual should be explored as soon as possible. It is not advisable to postpone operation long in the hope that jaundice will lessen. Usually the tendency to hemorrhage increases instead of lessening. It is frequently advisable to give small blood transfusions before operation in the hope of increasing the coagulability of the blood. Glucose, by vein and otherwise, should be pushed vigorously.

#### SUMMARY

1. The van den Bergh test is one of the most valuable aids in the differential diagnosis of

jaundice, and its correlation with clinical findings and other laboratory procedures will permit an accurate diagnosis in most instances. Parenthetically it might be stated that the van den Bergh test is not uniformly reliable, but neither is any other laboratory procedure. Occasionally a single case may give different reactions at different times, but in the great majority of cases it gives more information than any other single test.

2. Obstructive jaundice is usually a surgical condition, and early operation is advisable.

3. Those cases of jaundice due to liver cell damage are best treated by a high carbohydrate intake.

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### THE TREATMENT OF SEVERE CUTANEOUS BURNS

By

J. N. WALSH, M.D.,  
Moncks Corner, S. C.

Burns may be defined as a destruction of tissue produced by heat or chemicals. They may be trivial or of such a nature as to permanently scar, deform and cripple the patient. Burns are caused by contact of the body with various agents such as fire, hot water, hot oils and greases, electricity and chemicals. In this section, particularly during the winter months, fire burns of a serious nature commonly occur because of open fires. These burns are usually deep, and often extensive as regards the skin area involved.

Burns are usually classified as first degree (erythema), second degree (vesical formation)

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Read before the South Carolina Medical Association, Florence, S. C., April 25, 1935.



and third degree (eschar or complete destruction of the skin). Burns may be further classified according to whether there is complete destruction of the skin with healing taking place by epithelial growth from the edges or whether there are islets of epithelium within the burned area from which growth may occur. With the second type of burn, healing is more rapid and there is less scarring.

The depth of the burn determines to some degree the prognosis, but the area of skin involved is the most important factor in the prognosis. A burn involving from one-third to one-half of the skin area is usually fatal. Burns of even less extent are often fatal, depending upon the location and depth of the burn. Burns about the upper part of the body, particularly the head, carry a less favorable prognosis, all other factors being considered. According to Davidson, 45 per cent of the deaths from burns occurring annually in the United States are among children less than six years of age.

A burn is a wound differing from ordinary surgical wounds in that we have destruction of tissues without loss of continuity. The reaction of the tissues is that of inflammation, namely, hyperemia and exudation, leucocytic infiltration, separation of the dead tissues, granulation and healing by epithelial proliferation. The inflammatory reaction produces early systemic effects varying with the extent of the burn. These are dehydration or concentration of the blood and a depletion of the chlorides. A burn of a relatively small area may cause a considerable increase in blood concentration, particularly in children. Concentrations as indicated by hemoglobin reading of 125 per cent may occur without serious danger, but a greater concentration, if maintained for any period of time, will probably result in death, particularly if a point of 140 per cent is reached. Underhill, in a series of experiments on animals, has shown that with a burn involving one-sixth of the body area there may be a loss of 70 per cent of the blood volume within 24 hours by transudation of the blood plasma beneath the burned area. A human being weighing 65 kilograms, or approximately 150 pounds, has approximately 5,000 cc. of blood. Applying these figures to a person of that weight, this would mean a loss

of 3,500 cc. of the blood volume. The capillaries beneath the burned areas are injured with the resultant transudation of the fluid. This increased permeability of the capillaries is in one direction, namely from the blood to the tissues. The permeability of the fluids from the tissues to the blood is so decreased that a dose of strychnine which, when injected subcutaneously, will kill an experimental animal in 10 minutes has no effect when injected beneath or into the burned skin. This increased permeability of the capillaries lasts 24 hours, but the edema beneath the burned area persists for about six days.

The hemoglobin test is the most reliable index of the blood concentration and should be done frequently. We must remember that it is easier to prevent a marked concentration than to reduce the concentration after it has occurred. Large quantities of fluid are indicated until the period of rapid transudation of fluids beneath the burned area has passed.

The marked drop in the blood chlorides is interesting. Blood chlorides as low as 100 mg per 100 cc. have been recorded in severe burns. Thirty-six per cent of the chlorides of the blood may be lost before there is a diminution of the blood chlorides, due to the power of the body to replace rapidly from the tissues the loss of water and salts from the blood stream. The chloride content of the entire skin surface is increased and there is a rapid passage of chlorides beneath the burned area. The chlorides which pass beneath the burned area may be considered as permanently lost to the body. Vomiting, which so frequently occurs, causes an additional loss of the body chlorides.

A decrease in the blood chlorides is observed in a number of conditions, all being characterized by a loss of fluid from the blood stream. Peritonitis, ruptured gastric ulcer and any acute abdominal condition accompanied by a production of peritoneal fluid shows a decrease in blood chlorides. Dehydration as from toxic vomiting of pregnancy and the diarrheas also produce this depletion. It is uniformly observed in lobar pneumonia. An adequate supply of chlorides must be given to replace the chlorides lost from the blood stream.

Now in regard to the so-called toxin pro-

duced by burns. Experiments to determine a definite toxin have been conducted for the past eighty years. The evidence as regards the production and absorption of a toxin from the burned area is contradictory. Robertson and Boyd in 1923, in a series of well conducted experiments with guinea pigs, concluded that there is a definite toxin circulating in the blood and apparently carried by the red blood cells. They found extracts from the skin and whole citrated blood to be toxic. The blood plasma had no toxic effect. The toxin was supposed to be a split protein product. Kapsinow in 1932 repeated these experiments with extracts from the burned skin prepared in a manner similar to that of Robertson and Boyd, and found the toxic effect to be variable. He found the toxic effect to be produced by alcohol used in preparing the skin extracts, and confirmed this by injecting alcoholic solutions of various strengths, which produced effects similar to those produced by the supposed toxin. Harrison and Blalock in 1932 obtained no toxic effect by the injection of large quantities of whole blood from burned dogs into healthy dogs. Fender obtained no toxic effect attributable to a toxin with extracts from the lymph glands of animals dying from burns, and a number of other investigators have failed to sustain the toxin theory. The experiments of Underhill showing the rapid passage of fluid from the blood stream to beneath the burned area and the lack of the absorption of drugs injected beneath the burned skin would further show the lack of toxic absorption. The clinical picture in severe burns differs in no way from that in other so-called toxic conditions in which we have a concentration of the blood and a depletion of chlorides; in other words, dehydration.

The first and outstanding symptom of a severe burn is shock. This may require vigorous treatment depending upon the extent and depth of the burn. All patients dying within the first thirty-six hours die with symptoms of shock. They complain of being cold, the pulse is weak and rapid, and the temperature is subnormal. Vomiting is a frequent symptom. Dehydration comes on rapidly and contributes to the symptoms of shock. Pain may be excruciating in second and first degree burns. It must

be relieved by suitable opiates as it also contributes to the shock. With burns of the third degree the nerve endings are destroyed and there is no pain. With these cases, however, there is usually severe shock because of the depth and extent of the injury.

Following the period of initial shock, all burned cases develop fever. This is unquestionably due to infection of the burned area. In patients not treated by the tannic acid method the rise in temperature occurs earlier as these cases do not have the barrier to bacterial invasion offered by the properly produced tannic acid crust. With the separation of the slough the way for bacterial invasion is opened and a continuous elevation of temperature usually varying from 100 to 102 degrees occurs until the slough has separated and the burn is clean. The application of any type of dressing which interferes with the free drainage from the area is followed by a return or increase of the fever.

During this slow and always painful period of healing a number of complications may develop. Malnutrition and secondary anemia are always present in some degree. They may be minimized by the proper treatment of the infection. Contractures and disuse-immobilization of joints, too, commonly occur. I have had two patients to die from intestinal hemorrhage presumably due to ulceration of the duodenum (Curling's ulcer). Pneumonia and bronchitis sometimes occur with burns about the thorax.

We wish to particularly emphasize that burns in children are much more serious than in adults. They withstand the shock and the dehydration poorly; and early, vigorous treatment must be applied.

#### TREATMENT

The treatment of severe burns should be directed towards (1) the relief of pain, (2) the relief of the symptoms of shock, (3) the cleansing and proper protection of the burned area, (4) the combatting of the concentration of the blood (dehydration), (5) the control of infection and complications, and (6) the promotion of healing.

1. Pain must be controlled by the immediate administration of adequate doses of opiates. It is most marked in first and second degree burns as the nerve endings are not destroyed. Pain



no doubt contributes to the symptoms of shock.

2. Shock is only seen in deep and extensive burns. Burns about the head, thorax and abdomen are commonly accompanied by shock. Injury to deep structures by heat transmitted through the skin must be considered as an added factor in the production of shock and as a cause of death. External heat should be applied by means of hot blankets or hot water bottles. The administration of fluids should be started at this time.

3. After the patient has been relieved of pain and shows reaction from the shock the treatment of the actual burn is begun. We wish to emphasize that the burned area must be adequately cleansed before the application of any medication. All blisters must be opened and all loose skin removed. This may be done with scissors and forceps and by gentle sponging with wet gauze. The administration of a light anesthetic or large doses of morphine and a thorough scrubbing of the burned area with green soap followed by alcohol and ether has been advocated. We usually wash the burned area thoroughly with soap and water and follow this with ether, but feel that the administration of a general anesthetic is rarely indicated. If grease has been applied to the burn, as is frequently the case, it must be thoroughly removed with ether. The patient is then placed under a covered cradle heated with electric lights.

Following thorough cleansing, applications are begun to the burned area. We have used picric acid and tannic acid, and find that the tannic acid treatment is the more satisfactory. Gentian violet produces a hard crust as does tannic acid and in addition it has an antiseptic effect, but this apparently does not prevent the development of infection, according to the results reported.

Since the introduction of the tannic acid treatment by Davidson in 1925, it has been used in strengths varying from 2 per cent to 10 per cent, and with markedly better results than those obtained by previous methods of treatment. The patients are comfortable; with proper cleansing, infection is reduced; and the morbidity is lowered. "The precipitated protein formed provides a protective coating against

bacterial and mechanical action as well as against sensory and inflammatory irritation. The general comfort and easy handling of patients are promoted; the loss of body fluid is prevented; secondary infection, especially in superficial burns, is limited because of lack of favorable material for growth of organisms. The protective area of coagulated protein acts as a scaffold for the growth of epithelium. One of the important functions of the skin is the mechanical protection it affords by cloaking the body in a complete mantle of dead material, thus keeping the organism to some extent isolated from its environment. The formation of a crust or scab by tannic acid temporarily restores to the body some of the biological functions of the skin destroyed, thus allowing the organism to readjust itself to altered physiological conditions during a period when the patient is often struggling with shock."

Seegar in 1931 made a study of the tanning effect of various strengths of tannic acid solutions. He found that the solutions used were strongly acid and highly astringent, tending to cause swelling and edema of the tissues and a too rapid fixation of tannin at the surface. These disadvantages are overcome by neutralization to the same hydrogen ion value as that of the blood. This neutralization is not accompanied by any loss of the tanning power of the solution and the full beneficial effects are preserved. This solution is made by dissolving 4 grams of pure anhydrous sodium carbonate and 25 grams of tannic acid in 500 cc. of water. We have used this solution on our last three burned cases and find it superior in that a tougher, more uniform crust is formed. This crust does not disintegrate as does that formed by a simple tannic acid solution. We expect to use it for all burns where tannic acid seems indicated.

The tannic acid solution may be applied by means of a spray gun or upon gauze dressings covering the burned area. Gauze dressings have the disadvantage that they frequently stick to the burn and are quite painful to remove. We use an ordinary Flit gun that has been previously boiled, with very satisfactory results. The burned area should be sprayed at least twice each hour, and in twelve to eighteen hours a satisfactory tan is formed. The

tanned area must then be allowed to dry thoroughly and no moisture allowed to come in contact with it until sloughing begins. This method is used for burns about the body and extremities. For burns about the face and eyelids we have used tannic acid 5 per cent in a water soluble base, which is sold under the trade name of *Amertan*, with very satisfactory results.

4. With severe burns the concentration of the blood is rapid and may attain a considerable degree at the end of six hours. The water balance of the body is disrupted and fluids must be administered continuously in adequate amounts. A safe rule is 1,000 cc. of fluid for each 25 lbs. of body weight during the first twenty-four hours. This is given intravenously and subcutaneously in addition to fluids by mouth if the patient retains them. The ideal way to administer the fluid is by continuous venoclysis. This method has not been very satisfactory in my hands. An intravenous injection every four hours or an intravenous injection alternated with hypodermoclysis is entirely adequate. Fluids must be continued parenterally until the patient is taking them well by mouth and the urine output has increased to approximately normal limits. Normal saline, Runger's solution or Hartman's solution may be administered. Glucose is not necessary and concentrated solutions of any kind are contraindicated as they force a body with a disrupted water balance to give up more water from the tissues.

5. After the patient has been carried over the period of shock and dehydration, he is then relatively comfortable until the slough begins to separate. If the burn has been properly cleansed fever should not be high. The separation of the tannic acid coating usually begins about the tenth to fourteenth day and may not be complete for a month. Areas which do not harbor pus should be allowed to remain but all softened areas and areas beneath which pus forms must be cut away. This is usually quite painful and an opiate may be required. At the time the crust comes away it is often noted that extensive healing by epithelial growth has occurred over many parts of the burn. The areas over which there has been complete destruction

of the skin show the most infection. Wet dressings of normal saline solution promote drainage and help to clean up the infection. Dakin's solution may also be used with gratifying results, but it causes the patient much pain. We have obtained our best results in the cleaning up of infection with picric acid solution. We have been using a 1/4 of 1 per cent solution in 8 per cent glycerine. This solution is of the same surface tension as the tissue fluids. Picric acid is antiseptic, analgesic and coagulant. It is these properties that account for its extensive use in the treatment of burns. A wet dressing of picric acid solution applied over a large granulating area markedly promotes the comfort of the patient and causes a rapid improvement of the infection.

Complications such as pneumonia and bronchitis sometimes occur and they must be appropriately treated. They distinctly add to the mortality. Intestinal hemorrhage is usually fatal. Anemia and malnutrition must be combatted by the control of infection, the stimulation of appetite, and the use of suitable hematopoietic agents.

6. To stimulate the growth of epithelium, we have been using Bettman's scarlet-red ox-quinoline gauze. This causes a rapid proliferation of epithelium and the early healing of burns in which all the layers of the skin have not been destroyed or in which we have scattered islands of epithelium. With deep burns the proliferation of granulation tissue is much more rapid than the growth of epithelium. As the granulation tissue thickens organization takes place at the base with the formation of fibrous tissue. These are the areas that give us the heavy, thick scars. These areas, if very extensive or in the region of joints, should be skin grafted early. If they cover regions such as the popliteal space, the axilla or elbow, the part must be kept extended to prevent the fusion of contiguous surfaces and the development of disabling contractures.

In conclusion, I may say that the treatment of a severely burned patient requires careful nursing and constant attention on the part of the physician. The patience of the injured person is always tried, and often that of the physician. We may expect results according



to the pains-taking care given the individual case.

### DISCUSSION

Dr. W. H. Prioleau, Charleston:

Dr. Walsh has covered the subject from both a theoretical and a practical standpoint. I can only emphasize (and I can not overemphasize) several features. First is the treatment of the shock. This is most important. Next is the asepsis of the area—the cleansing of the area before the tannic acid is applied. Most of us see cases after croton oil and things of that nature—even automobile grease—have been put on. All of this has to be cleaned off, and cleaned off thoroughly, before the tannic acid is applied. Then after a few days we have to be on the look out for infection under the tanned area. If the tanned membrane is very thick, the infection can not break through. Should infection be present it is necessary to make incisions for drainage or peel off the tanned membrane with a sharp knife. Another point is that the tannic acid is effective only if applied within the first few hours after the burn. After this it simply forms a superficial crust and messes things up. If we see them later, we have to use some other method of treatment.

Of great importance: do your grafting early. If you wait, the less the blood supply is to that region, and the less likelihood that the graft will take. What type of graft? For this purpose, I think the simplest and best graft is the deep pinch graft. Pick up a

bit of skin with a needle, cut it off and place it on the granulating surface. Apply them closely together. Most of them will adhere and grow. If you get only ten per cent of "takes" that is a nice beginning, and you can put some more on after a week or two. But graft early in order to prevent contractures and scar tissue.

Dr. S. E. Harmon, Columbia:

If you will excuse an expression from the chair, I should like to say something about skin grafting. I find that the pinch graft, as Dr. Prioleau has outlined, is a very good method. I think there is no other method that quite equals the pinch graft, the full thickness of the skin.

Dr. Walsh, closing the discussion:

I wish to thank Dr. Prioleau for his very kind discussion. I think the points he has emphasized are well emphasized and very well utilized in the treatment of a burn by tannic acid or any other method.

In regard to the application of tannic acid or any other crust-forming material, it is very essential that we have the burned area very well cleaned up before its application and that we watch it very carefully and remove that membrane in case infection develops.

I agree with Dr. Prioleau about early skin grafting. I have found that small whole-thickness grafts work very nicely. With a thorough cleaning up of the whole burned area we get a high percentage of takes.

## SOCIETY REPORTS

### SEVENTH DISTRICT MEDICAL ASSOCIATION, SEPTEMBER 19, 1935,

Manning, S. C.

#### *Program*

1. Invocation.
2. "The Endocrine Background of Diabetes Mellitus," Dr. C. P. Osteen, Sumter, S. C.
3. "Urological Symptoms Resulting From Pathological Conditions of the Female Urethra," Dr. G. Aubrey Hawes, Charlotte, N. C.
4. "The Handling of Duodenal Ulcer," Dr. LeGrand Guerry, Columbia, S. C.

5. "Tumors of the Brain," Dr. E. P. Fincher, Atlanta, Ga.

6. "Bronchoscopic and Clinical Observations in Bronchial Obstruction and Bronchiectasis," (Lantern slides and moving pictures), Dr. E. P. Fincher, Atlanta, Ga.

7. Case Reports.

8. Election of officers.

President, Dr. W. Scott Harvin, Manning, S. C.

Secretary, Dr. Carl B. Epps, Sumter, S. C.

# THE JOURNAL

OF THE

## South Carolina Medical Association

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OCTOBER, 1935

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### MEDICAL COLLEGE OF SOUTH CAROLINA TO CELEBRATE FOUNDERS' DAY EXERCISES

On November 13th the Medical College of the State of South Carolina will schedule the

second annual celebration of Founders' Day, in commemoration of the first opening exercises of the College one hundred and eleven years ago.

In November, 1824, the College opened its doors to candidates for the medical degree in the then new building, erected for the purpose, at the West end of Queen Street.

### DR. DAVID RIESMAN'S LECTURE

The Founders' Day Lecture will be delivered at the evening banquet by Dr. David Riesman, Professor of Clinical Medicine, University of Pennsylvania, Philadelphia.

In addition to the good fortune in having Dr. Riesman as the lecturing guest of the occasion, it is singularly appropriate that the lecturer should come from the University of Pennsylvania since all of the medical members of the first Faculty of the Medical College were graduates of that institution, which is the oldest medical school in the United States.

Dr. Riesman's lecture will be the feature of an all day program with special clinics and clinical lectures and conferences at the Roper Hospital and in the Medical College laboratories from 10 A.M. until 5 P.M. It is anticipated that Dr. Riesman will also participate in the clinics and will speak before the Medical History Club at a luncheon meeting.

A large attendance of the many alumni and of other physicians is expected for the day as well as for the evening banquet. It is also anticipated that there will be present representatives of other medical institutions and from the other colleges of the State.

Detailed announcement of the program will be published and mailed to members of the medical profession at a later date.



## EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

### INFLUENCE OF ANATOMIC STRUCTURE IN DISEASES OF THE NOSE AND EAR

Emanuel U. Wallerstein, M.D.,  
Arch. Otol., July, 1935, p. 16.

Immunology, bodily resistance, virulence of infection—have their part but—as do endocrine influence and exudative diathesis, but a closer study of diseases of nose and ear would reveal the prime importance of the anatomic features. This study is of value in the proper understanding of the development of disease, its progress, its symptoms and the rationale of treatment—operative as well as medical.

As for instance (1) a primary mastoiditis may be a case of mastoiditis secondary to otitis media but its connection masked by a small aditus, a small antrum, or poorly developed mastoid cells.

(2) Gradenigo's syndrome is an associate of extremely pneumatic temporal bones permitting the easier spread of infection to the petrous tip; the infection may also spread by the peri-labyrinthine cells.

(3) That the prompt healing of a radical mastoid was prevented by Eustachian Tubes that permitted easy passage from the postnasal space to the middle ear.

(4) That as the pneumatization of a mastoid decreases the tendency to intracranial complications increases, and in such diplocic mastoids the classical symptoms of mastoiditis are often absent.

(5) Thrombosis of the lateral sinus is most frequently on the right side, because the right sinus is more forward on that side and consequently more in position to be involved.

(6) Some of Wittmaack's conclusions are:

- a. Infection of the middle ear occurs through the Eustachian tube and is favored by

pathological pneumatization of the temporal bone.

- b. The development of chronic suppuration is favored by disturbance in pneumatization by a high degree of hyperplasia of the mucous membrane.
- c. Acute otitis media is more usually in a temporal bone with pneumatization normal or near normal, the chronic suppuration occurs in temporal bones with pathological pneumatization.
- d. Chronic suppuration is more common in its course, is predetermined by the severity and extent of arrest in temporal bone pneumatization.
- e. In intracranial involvement it should be determined if it arises by contact or by blood transmission.
- f. Blood stream transmission is more apt to occur in cases pathologically pneumatized because of the greater intercommunication between mastoid tissue and dura.

In the nose the following anatomic facts are of importance:

1. Marked orbital extension of the ethmoidal cells render intranasal surgery futile.

2. Bony septums in the antrum or the location of the antral floor below that of the nose indicate a radical antrum operation.

of sinus disease as is shown in the Negro race.

Sphenoid disease is increased by a lessening in the size of its opening.

Optic nerve involvement increases with the proximity of the sinus and thinness of the dividing partition.

Some frontal infundibulum drain into the antrum, the antra in these cases being merely a retention reservoir.

Rupture of an ethmoid into the orbit occurs more readily in the young because turbinates swell more and cause more obstruction to drainage at that age.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE  
STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 292 (25835) MAY 3, 1935

*Service of Dr. Hope*

Student Barr (presenting case history):

White male, age 26 years, admitted March 23, 1935, died March 30, 1935.

Severe sore throat 11 days before admission with much external swelling. After poulticing for a week with flaxseed this subsided. Has had high fever since the onset of his trouble. 5 days ago began to blow "blood and corruption" from his nose, and this has continued to date. Swelling above and medial to right eye began 3 days before admission. Slight anorexia. No other symptoms. No headache.

Family history irrelevant. No previous illnesses.

Examination: Temp. 104, pulse 124, resp. 26, B.P. 110/80. Well developed. Rt. frontal region swollen, questionably crepitant, very tender, giving ptosis of rt. lid. Bloody purulent discharge from nose. Gums spongy, many teeth carious. Tonsils and pharynx reddened and congested. Chest: "Coarse rub in both bases, probably transmitted from throat. Otherwise clear." Heart: apparently not enlarged, sounds of good quality, no murmurs or arrhythmias. Liver questionably palpable 1½ inches below costal border. No other abdominal findings. Neurological: "KJ's not elicited; no Babinski or ankle clonus."

Lab: Urine—Sp. Gr. 1022, alb., sugar and acetone 0, pus, blood and casts 0. Blood (3/23, 3/25, 3/26) Hb. 70%, 65%, 58% (D); RBC's not given; WBC 10,500, 18,600, 23,100; Polys 89%, 80%, 84%; lymphs 10%, 14%, 10%; monos 1%, 3%, 2%; eosinos 0, 2%, 3%; basos 0, 1%, 1%; achromia 3 plus. Blood Kolmer and Kline neg. Spinal Fluid (3/24) normal pressure, slightly cloudy, total cells 250, polys 90%, globulin 2 plus, sugar 1 plus, no organisms seen. Culture neg. 3/26—clear fluid, normal pressure, total cells 18, polys predominate, globulin 1 plus, sugar 1 plus. X-ray of sinuses: See chart. Blood Culture (3/27) negative.

Progress: Temp. constantly 102 or above until A.M. of 3/26 when it fell to 100, followed by chill and sharp rise to 104.4. Septic curve after this, several chills, peak rising to 107 on day of death. Pulse followed temp. curve. Respirations 24-62, more rapid for last 2 days. Several hours after admission still had no headache but complained of pain in rt. chest. Stiff neck, positive Kernig, inconstant Babinski. Eyegrounds negative. Following spinal tap, patient complained of headache. 3/26 Drowsy, very toxic. Pulse very poor and thready. Both eyes painful, especially right. Stiffness of legs and neck. 3/27 Has swelling on right side of temporal bone, over right eye and over bridge of nose. Delirious. Chest clear except for a few fine rales in both bases, no cough. 3/28 Slight cough, rales over both chest anteriorly and posteriorly. Became comatose and died at 1 A.M. of 3/30/35. 3 blood transfusions of 250 c. c. each given (3/25, 3/27, 3/29).

Dr. Wilson (conducting): Mr. Fouche, let's hear from you first.

Student Fouche: This man gives a history of a severe sore throat with swelling of his neck, and this onset was probably a severe septic sore throat. The swelling in the right frontal region, with the continued high fever is suggestive of a purulent sinusitis, especially involving the sinuses about the right eye. This swelling may also indicate a thrombosis of the right cavernous sinus. The development of a positive Kernig, Babinski and stiff neck indicate a meningitis, probably resulting from the sinus thrombosis. I believe the patient died of a meningitis and a pneumonic infection, probably a terminal pneumonia. The lessening of the spinal fluid pleocytosis is very hard to correlate with the clinical picture.

Dr. Wilson: Mr. Yates, what is your analysis of the case?

Student Yates: I believe the whole condition started on a basis of a septic sore throat. The swelling, tenderness and suggestive crepita-



tion over the right frontal sinus are strong evidence of an acute frontal sinusitis, probably secondary to the infection of the throat. I believe a cavernous sinus thrombosis followed this but not a meningitis, because the clearing of the spinal fluid towards the end of a fatal meningitis is a very uncommon occurrence. I believe that the abstract indicates a brain abscess of some silent area more than it does a generalized meningitis. The changes in the spinal fluid are much more suggestive of a brain abscess than of a meningitis, as I would expect the fluid to be more purulent there. The pains in the chest may well represent embolism or a terminal pneumonia.

Dr. Wilson: Mr. Bowden?

Student Bowden: I believe that a pansinusitis was the original condition here, but that the intracranial complication was a localized meningitis. Death was probably due to pyemia, with multiple embolic abscesses in the lungs, the emboli arising in a thrombosed cavernous sinus.

Student Robertson: I believe that the mode of extension into the cranial vault was either by direct erosion of the walls of the frontal sinus, or else by extension along the ophthalmic vessels to the cavernous sinus. The intracranial lesion is probably either a brain abscess or a localized meningitis. The infecting organism was probably a hemolytic streptococcus, because of the rapidly developing anemia in spite of repeated blood transfusions.

Dr. Wilson: Dr. Hope, will you discuss your case?

Dr. Hope: This man's complete history was really of two years duration, with repeated attacks of sinusitis. On this admission he had a pansinusitis, especially on the right side, and that is well illustrated by these x-rays. There was marked swelling about the eye and also a tender swelling of the right temporal bone. He was acutely ill and operation was not advised because of his generally poor condition and because it is generally thought that it is best not to open an acute fulminating sinus for fear of extending the infection. He was treated locally in an attempt to drain the sinuses through the nose, but with little success. Following each blood transfusion his general con-

dition improved temporarily, but at no time was he in condition for even the most conservative operative procedure. The fluctuant swelling over the right frontal sinus was thought to be an osteomyelitis of the frontal bone following sinus infection. A brain abscess was thought to be the most likely complication to explain his cerebral symptoms; that is the usual intracranial complication of sinusitis. He appeared to be septic in spite of a negative blood culture.

Dr. Lynch: This is, as has been surmised, a brain abscess following sinus infection, but the termination was somewhat different from that given.

There was much swelling about the orbit at autopsy, with several osteomyelitic abscesses on the right side of the skull. The sheath of the right temporal muscle was distended with pus, and the muscle was necrotic. There was some swelling of the conjunctival tissues but no proptosis of the eye.

The right frontal lobe was extensively agglutinated to the dura by fibrinous exudation, there being a localized meningitis here and on the under surface of the left frontal lobe, with the rest of the meningeal surface uninvolved. In the tip of the right frontal lobe a foul suppurating cavity about 4 cm. in diameter was found, and you can see it here in this specimen. The cavernous sinus on the right was thrombosed with actual accumulation of pus in this vascular channel. The left cavernous sinus was open and clear. Beneath the cavernous sinus the whole sphenoidal and ethmoidal system of sinuses were filled with pus. The middle and internal ears were free of infection.

The terminal picture was one of pyemia, with an active transfer of the infection via the blood stream, in spite of the negative blood culture. There was an abscess in each lung, doubtless arising from infected emboli whipped off from the infected thrombi in the cavernous sinus. These abscesses had ruptured into the pleural cavity on each side, and about 500 cc. of foul watery pus was accumulated in each pleural cavity.

The course of the infection to the fatal issue is fairly clear: sore throat, paranasal sinusitis, cavernous sinus thrombosis, brain abscess and pyemia. Perhaps Dr. Lassek can give us the

exact course of the infection from the sinuses.

Dr. Lassek: This probably took place via the numerous veins of the ethmoidal sinuses, which pass through the cribriform plates of the ethmoid bones and terminate in the cavernous sinuses.

Dr. Prioleau: It is well to note how early embolism develops following infections about the face and sinuses. I have seen a case of skin infection about the nose in which emboli to the lung were evident before the patient's condition had really seemed serious otherwise.

Student Lemkin: How do you explain the fall in the spinal fluid cell count?

Dr. Johnson: That probably represents a walling off of the inflammatory process.

Dr. Peery: The spinal fluid findings seem

to me fairly characteristic of brain abscess. In this case there was an osteomyelitis of the bony roof of the nasal sinuses, and a local meningeal irritation, with the outpouring of fibrin and inflammatory cells to cause the agglutination of the meninges to each other and to the bone. Walling off of the infection was probably complete enough to prevent the general contamination of the meningeal spaces, in the same way that a localized abscess can develop in the peritoneal cavity without general contamination of the peritoneum. As the adhesions about the meninges became firmer, the spinal fluid would no longer be cloudy. An actual purulent fluid with organisms is not to be expected in such a case of brain abscess until it ruptures into the general meningeal spaces.

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## NEWS ITEMS

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The trustees of the Lilly Heard Anderson Lectureship in Pediatrics announce that Dr. Thomas M. Rivers will deliver the annual lecture at the Academy of Medicine, Atlanta, Ga., Thursday, Nov. 14, 1935. Dr. Rivers' subject will be "Virus Diseases of the Central Nervous System." The talk will include: Anterior Poliomyelitis, its treatment and prophylaxis; virus encephalitides; and the new virus meningitis that is attracting attention at the present time.

Dr. Rivers, a native Georgian, is in charge of this field of research at the Hospital of the Rockefeller Institute for Medical Research in New York City. He is a recognized authority in his line of endeavor, and should be warmly received in Atlanta both on account of his ability and his nativity.

The medical profession is cordially invited to attend.



## SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

### "THE TREATMENT OF PERFORATED PEPTIC ULCERS"

The conditions associated with perforated peptic ulcers vary greatly and accordingly no set rules for their treatment can be promulgated. However an attempt should be made to evaluate the various factors and the underlying principles of treatment established. These will vary to some extent with different surgeons according to the types of cases encountered as well as their own skill in handling them. In an article in the Journal of the American Medical Association (104:7, Jan. 5, 1935), Dr. Hugh H. Trout of Roanoke, Virginia, reviews a series of 41 cases. He makes deductions principally from these and in addition a consideration of the literature.

While drainage after operation is generally looked upon as a safety measure, in this type of case it may be fraught with great danger, especially if improperly used. The author reports four cases seen in consultation in which drains were placed near the point of closure of the perforation. All were followed by gastric or duodenal fistulas, a lingering illness, and finally death. The question of whether or not to drain depends greatly upon the amount and type of soiling of the peritoneal cavity and the time elapsed since the perforation. The type is dependent upon the bacterial flora of the mouth and pharynx, the food intake and the stage of digestion. Of great importance is the inhibitory action of hydrochloric acid upon bacteria; in cases of peptic ulcer the acid content of the stomach is generally high. In these cases it seems best to reverse the usual rule, and when in doubt not to drain. When drains are used it is imperative to see that they are not near the site of perforation. Bringing them out through

an adequate stab wound in the lumbar region is preferable to bringing them out through the incision.

Simple closure of the perforation as a rule is the safest procedure. Induration and other changes add greatly to the difficulty of excision of the ulcer with pyloroplasty. Pyloric obstruction at times necessitates gastro-jejunostomy however continuous gastric suction through a nasal tube has greatly reduced the indications for this. In less than 10 per cent of the author's cases in which only a simple closure was done has a subsequent operation for obstruction been necessary. Besides the increased danger attendant upon performing immediate gastro-enterostomy unless specifically indicated, further reason against its routine use is the danger of the formation of gastro-jejunal ulcer, which lately has been proven to be more common than heretofore thought.

In this series are reported three cases of acute perforation on the posterior wall, all associated with repeated massive haemorrhages. The details of how they were treated are not given, but all of them died. The author suggests that the best method to follow in this type of case is to do a partial gastric resection as advocated by Allen and Benedict. The author's experience has not supported the dictum that "bleeding ulcers don't perforate and perforating ulcers don't bleed."

The most important factors in obtaining a low mortality rate are early diagnosis and immediate operation. In this series the mortality rate is 22 per cent. This is somewhat lower than the average, which is attributed to the fact that these patients were referred for surgical treatment somewhat earlier after the perforation than is usually the case.

## MEDICAL COLLEGE TO MARK FOUNDING

111th Anniversary Will Be Observed at  
Exercises Here on November 13

*Dr. Riesman to Speak*

Orator, Like First Faculty, From the  
University of Pennsylvania  
Faculty to Hold Clinics

The Trustees and Faculty of the Medical College of the State of South Carolina are looking forward to a large attendance of alumni and other physicians at the second annual celebration of Founders Day, to be held November 13th at the Roper Hospital and the Medical College, and at the Fort Sumter Hotel. The exercises are in commemoration of the first opening of the College 111 years ago.

The Founders Day Lecture will be delivered at the evening banquet, to be held at the Fort Sumter Hotel at 8 o'clock, by Dr. David Riesman, of Philadelphia.

Dr. Riesman holds the chair of Clinical Medicine at the University of Pennsylvania. He is a leader in medical education, in the practice of the specialty of internal medicine, and in medical history circles, and is a noted speaker at medical gatherings and writer in medical literature.

Dr. Riesman is well known by the medical profession of this state as well as at large. In addition to membership in various medical and scientific societies he is a past president of the Philadelphia Medical Society, the Philadelphia Pathological Society, the Northern Medical Association, the Medical History Society, and the Gastro-Enterological Society.

He was born in Stadt-Lengsfeld, Germany, but has spent his professional life in this country. After graduating from the University of Pennsylvania, in 1892, he held several teaching positions in its medical school and was for a number of years Professor of Clinical Medicine and physician to the Philadelphia General Hospital and the University Hospital. At the present he is Professor of the History of Medicine and Professor Emeritus of Clinical Medicine. To his numerous other publications he

has added this year his book "The Story of Medicine in the Middle Ages."

In addition to Dr. Riesman's lecture in the evening there will be a day of special clinics at the Roper Hospital and Medical College, given by various members of the Faculty for the benefit of their guests of the day. It is expected that Dr. Riesman will give one of these clinics and will speak to the Medical History Club at a luncheon meeting.

### PROGRAM

#### Roper Hospital Clinics

9-9:30 A.M.—Nephrosis, Dr. Wythe M. Rhett.

9:30-10 A.M.—Toxemias of Pregnancy, Dr. Lester A. Wilson.

10-10:30 A.M.—Common Foot Troubles, Dr. F. A. Hoshall.

10:30-11 A.M.—Pyuria and its Treatment, Dr. J. J. Ravenel.

11-11:30 A.M.—Infections of the Hand (illustrated), Dr. Wm. H. Prioleau.

11:30-12 M.—Medical Clinic, Dr. Robert Wilson.

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4-5 P.M.—Medical Clinic, Dr. David Riesman, Philadelphia.

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#### Fort Sumter Hotel

8 P.M. ----- Banquet

Founders Day Lecture: "The Clinical Approach", Dr. David Riesman, Professor of Clinical Medicine, University of Pennsylvania.

The Medical College is among the oldest medical schools in this country and has supplied many promising physicians to the nation and abroad as well as furnishing the majority of physicians to this State throughout its history. During recent years its graduates have composed about 75 per cent of South Carolina's doctors.

Among its graduates are numbered many of high standing in the several government services and in medical institutional and educational service.

The first faculty of the College was a famous one and immediately put the College to the forefront. Its position of leadership was disturbed by the War Between the States and the Col-



lege closed during the War. From its reopening, following the War, it has pursued an honorable course in service to the people of the State, and it was taken over and made a part of the university system of the State in 1913, ranking during its operation in this system as a medical school of the first grade.

At the present time the Faculty numbers about forty of professional rank and about thirty-five in the lower teaching grades. By

virtue of the necessity of limiting the number of students practically all members of the classes are citizens of South Carolina, although a large number of outside applicants knock at its doors each year.

The Board of Trustees and Faculty issues a cordial invitation to the medical profession of the State and any others who may be interested to join in the annual Founders Day Celebration.

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## NEWS ITEMS

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Greenville, S. C.,  
October 14, 1935

To County Secretaries:

Dear Doctor:

On November 5 the South Carolina Society of Ophthalmology and Otolaryngology is having its annual meeting at the Columbia Hotel, Columbia, S. C., at 3:00 P. M. We are fortunate in having at this time Dr. T. L. Terry from the Massachusetts Eye and Ear Infirmary who will address us. There will also be two other short papers by local men. Following the scientific program we will have a dutch dinner at the Columbia Hotel. We will be delighted to have any members of your society who would like to come. Anyone who does come I feel sure will be well repaid as Dr. Terry is an exceptionally interesting and able speaker. If any of your members decide to come I would appreciate your letting me know so that accommodations may be reserved for them.

Fraternally yours,

J. W. Jervey, Jr., M.D.

Secretary S. C. Society of  
Ophthalmology and Otolaryngology.

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### LAURENS COUNTY MEETING

At the recent meeting of the Laurens County Medical Society Dr. George R. Wilkinson, Greenville, delivered an address on the financial

side of the practice of medicine. Dr. Wilkinson strongly urged better business methods in dealing with patients and more prompt efforts at collection of fees. The speaker was of the opinion that in many localities fees could be increased to the benefit of the doctor and patient. He also stressed the importance of greater discrimination in the designation of charity cases.

Dr. Edgar A. Hines of Seneca, Secretary-Editor of the South Carolina Medical Association addressed the Society on the functions of organized medicine in solving medical economics problems. Dr. Hines gave an outline of the activities of the American Medical Association as well as activities of the State Medical Society. Dr. Hines appealed for a one hundred per cent county society membership and a united front along all lines connected with the practice of medicine in its legitimate fields.

A liberal discussion followed the addresses of the invited guests, in which many of the members of the county society participated. The Laurens Society is one of the oldest county societies in the upper part of the State and it has had many distinguished physicians on its roll of membership. There was a good attendance and a delightful supper was enjoyed by the Society.

Dr. D. O. Rhame, Jr., Clinton, President.

Dr. Geo. R. Blalock, Clinton, Secretary.

E. A. H.

## SOCIETY REPORTS

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### THIRD DISTRICT MEDICAL ASSOCIATION, OCTOBER 18, 1935

#### Program

1. Turkey Dinner, served by ladies.
2. Address of welcome—Dr. R. C. Grier, President of Erskine College, Due West, S. C.
3. The Principal Cause of Backache in the Latter Half of Life—Dr. George R. Wilkinson, Greenville, S. C.
4. The Treatment of Certain Endocrine Disturbances with Deep X-Ray Therapy—Dr. Will S. Judy, Greenville, S. C.
5. Dissection Showing Anatomy of G. U. Tract. Some remarks on Trans Urethral Section—Dr. H. M. Daniel, Anderson, S. C.
6. Unfinished Discussion of Mental Hygiene—Dr. B. O. Whitten, Clinton, S. C.
7. The Treatment of Nephritis—Dr. A. Ellis Poliakoff, Abbeville, S. C.
8. Election of Officers.
9. Adjournment.

Dr. J. R. Power, Abbeville, S. C., President.  
Dr. F. L. Mabry, Abbeville, S. C., Secretary.

### PROGRAM FOURTH DISTRICT MEDICAL ASSOCIATION, GAFFNEY, S. C., OCTOBER 15, 1935, 4:00 P. M.

#### *Scientific Program*

1. Infections of the Upper Respiratory Tract: Dr. John R. Harrison, Greer, S. C.
2. Pyuria in Children: Dr. Mordecai Nachman, Greenville, S. C.
3. A Brief Resume of Some Urological Conditions, Emphasizing Obstructions: Dr. W. B. Lyles, Spartanburg, S. C.
4. Diseases of the Oral Mucosa: Dr. J. Hughey Crooks, Greenville, S. C.
5. Some Physiological Factors in the Production of the Allergic State, or Why Asthma: Dr. Everett B. Poole, Greenville, S. C.
6. The Prevention of Contagious Diseases

in Children: Dr. D. Lesesne Smith, Jr., Spartanburg, S. C.

7. Treatment of Eclampsia: Dr. R. M. Dacus, Jr., Greenville, S. C.

8. What the General Practitioner Should Know about Glaucoma: Dr. W. McNeill Carpenter, Greenville, S. C.

Dinner 7:15 P.M.—Hotel Carroll

Remarks: President-Elect of S. C. Medical Society, Dr. R. C. Bruce, Greenville, S. C.

Reading of Minutes.

Entertainment by Limestone College Students.

Election of Officers.

Reading Time of Papers 15 minutes.

Discussions 5 minutes.

Dr. A. P. McElroy, Union, S. C., President.

Dr. R. M. Pollitzer, Greenville, S. C., Vice-President.

Dr. G. R. Wilkinson, Greenville, S. C., Secretary.

### SOUTH CAROLINA TUBERCULOSIS ASSOCIATION

#### *Twenty-Ninth Annual Christmas Seal Sale*

Columbia, S. C.

October 17, 1935.

To Directors S. C. Tuberculosis Association:  
Dear Director:

Our Annual Meeting will be held on Friday, November 1st, this year. I hope that you can be here.

The meeting of the whole Association will begin at 12 o'clock and that of the Board of Directors will be held at 1 P.M. for the election of officers. Following the Director's Meeting, we shall have a Dutch Luncheon for Directors, Members, Christmas Seal Sale Chairmen and friends. All sessions will be at the Columbia Hotel.

Outstanding speakers on the program will be Dr. F. H. McLeod, our State Seal Sale Chairman, Dr. Philip P. Jacobs, Extension



Director of the National Tuberculosis Association, and Miss Jean Latimer, Health Education Consultant, Boston, Mass. You know Dr. McLeod and Dr. Jacobs. We shall be glad to introduce Miss Latimer, who is a native of Greenville, but better known throughout the country as Health Education Director of the Massachusetts Tuberculosis Association.

We are trying to get a demonstration showing of the new sound film "Contacts" produced for the Tuberculosis Association in Minneapolis, but cannot announce success as yet.

A program will be sent to you in about a week. This letter is to give you more time to plan to be with us.

Will you let us know if you expect to be here and if we may reserve a plate (75c) for you at the Luncheon?

Sincerely yours,

Mrs. D. McL. McDonald,  
Executive Secretary.

---

#### AMERICAN SOCIETY FOR THE CONTROL OF CANCER

October 1st, 1935.

Dr. E. A. Hines, Sec'y-Treas.,  
South Carolina State Medical Society,  
Seneca, South Carolina.

Dear Doctor:

The Cancer Committee reports of ten southern State Medical Societies are enclosed for your perusal. I believe you will find them as interesting and helpful as they have been to us. Although many Chairmen have overlooked details relative to the number of meetings, the character of their audiences and the number of individuals in attendance, this office has been able, through correspondence and through checking of material ordered for meetings, to secure certain figures which represent the minimum number of meetings, etc.

A survey of this data shows that from the total number (835) county medical societies in thirteen states, 416 known medical societies held cancer meetings in 1935. In this area there have been 207 radio talks given and newspaper articles have been published in twelve states. In addition, nurses' study courses on cancer have been carried on in 395 hospitals.

The cancer control work during the past three years has been confined for the most part to presentation of facts relative to cancer of the breast and uterus to the medical profession. Many Cancer Control Committees have come to believe that these two subjects should be repeated because they represent sites where diagnosis, prognosis and the outcome of early adequate treatment promise the best education from the results produced both for the lay and medical groups. In order to bring about a coordination of results it has been suggested that lay education be intensified and carried along simultaneously with the cancer symposia for the medical group. Since the 2,500,000 women belonging to the General Federation of Women's Clubs in the United States are supporting a program of education within their groups on the subject of cancer of the breast and uterus, these groups within your district will be looking to your Committee for advice and guidance. As individuals they will be seeking examinations from general practitioners who are the key men in cancer control. The American Society for the Control of Cancer, in order to contribute its share, will furnish you with three film strips together with such literature as may be needed.

The film strips are as follows:

1. New film strip on tumors of the breast (medical).
2. Film strip for popular audiences entitled "Fight Cancer With Knowledge."
3. Film strip (semi-technical) for use with audiences such as college students, dinner clubs, etc., entitled "Cancer: Its Life History and Practical Measures for Its Control."

A complete talk will be available.

Your attention is called to the fact that a film strip projector and films are in the hands of the Chairman of each State Cancer Control Committee for the use of the Committee. In addition a permanent loan collection of: an eight-minute Canti film together with slides and film strips will be found in your State.

Each member of the Cancer Committee of all State Medical Societies has been furnished with a list of the material available within each state.

Please note that literature for lay groups will be placed with all State and County Health Departments in your territory, whenever you ex-

press that wish.

This Society can also furnish you with a modest set of posters and charts for lay education. Medical exhibits for state societies are available on request.

I beg permission to note that some State Cancer Control Committees have been able to accomplish much with a minimum of individual effort by securing:

1. A more or less permanent committee with rotating membership, i.e., only one member retiring each year.

2. The aid and cooperation of each councillor who stimulates each County Society in his district to have a cancer symposium each year and to appoint a local cancer committee to advise and assist the health officer and the women's clubs.

3. A division of labor within the State Committee to make one member responsible for each of the following activities:

- a. Newspaper releases
- b. Lay education meetings (women's clubs)
- c. Radio broadcasts
- d. Medical society symposium
- e. Stimulation of individuals and special groups for diagnosis and treatment
- f. Ambulatory cancer institutes or clinics for post-graduate work.

4. By starting committee activity on Cancer Control in October.

I am taking this opportunity to thank you for your past interest and trust that you will make your future wishes known to me.

Very sincerely,

J. W. Cox, M.D.

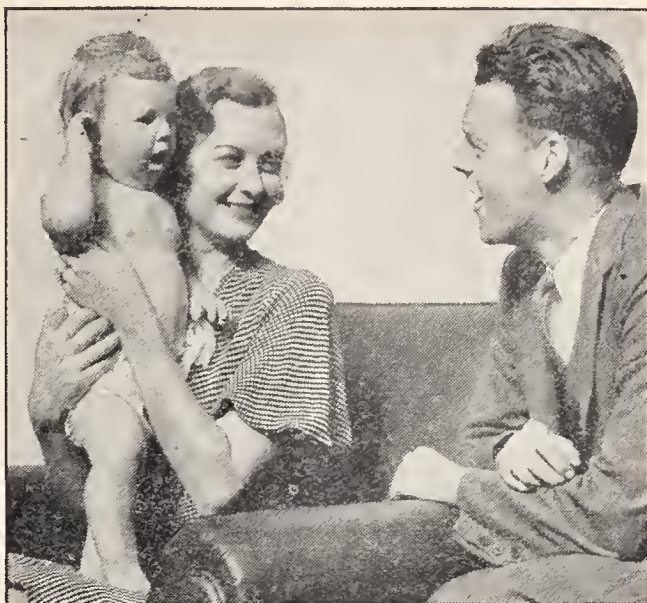
Southern Field Representative.

#### *Report on South Carolina*

#### Report of the State Cancer Committee:

Last year the House of Delegates passed the motion of Doctor Kenneth M. Lynch to the effect that the President appoint a State Cancer Committee adopting the five year cancer program of the American Society for the Control of Cancer. The Committee appointed consisted of Doctor J. A. Allison, Chairman, Doctors F. H. McLeod, W. M. Sheridan, Hugh Smith, Kenneth M. Lynch and T. R. W. Wilson.

The committee met in Columbia, S. C., December 21, 1934, only one member absent.



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**T**HEY'RE a healthy, happy young couple—proud in the possession of their first baby.

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Doctor S. E. Harmon, President elect, Doctor E. A. Hines, Editor of the State Journal and Doctor J. W. Cox, field representative of the Society for the Control of Cancer were present. Doctor Cox outlined briefly the work done in other states and recommended a program for South Carolina. Dr. E. A. Hines made a motion that the January issue of the South Carolina Journal be made a cancer number and that the Chairman of the Cancer Committee write a brief summary of the work of the American Society for the Control of Cancer explaining what it will furnish to the South Carolina Cancer Committee. This article was printed in the January Journal of the South Carolina Medical Association.

Respectfully submitted,  
J. Richard Allison,  
Chairman of the State Cancer Committee.

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Greenville, S. C.

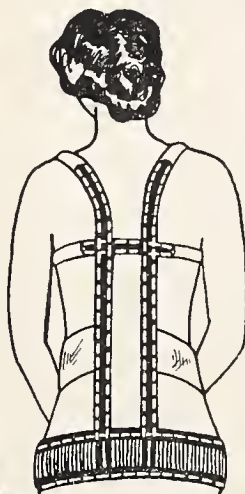
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# THE JOURNAL

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## South Carolina Medical Association

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### SUBPHRENIC ABSCESS

By

G. T. TYLER, JR., M.D.  
Greenville, S. C.

Subphrenic abscess is one of the most serious of abdominal complications. Fortunately it is not frequent; but it is also not rare. The prognosis is grave, and the mortality high—82 per cent to 100 per cent in unoperated cases: 20 per cent to 50 per cent in operated cases, according to the duration of the infection and the condition of the patient. Since 88 per cent of over 3,000 cases collected by Ochsner and Graves follow a primary abdominal process, the early diagnosis and adequate treatment before pus is formed, and if it is found, ample drainage with intensive—including postural—treatment after operation, is mandatory.

Only about 30 per cent of subphrenic infections suppurate. The remaining 70 per cent resolve spontaneously. Lee in 1915 reported 4 cases where accumulations were found beneath the diaphragm. These resolved, although operation had been planned in some of them. It occurs more frequently in males (74 per cent of cases). The reason is often an anatomical one, for drainage from the iliac fossa into the pelvis is more difficult in the male than in the female. The primary infections are, appendicitis, ruptured gastric or duodenal ulcer, diseases of the gall bladder and bile passages, pelvic infections, abscess of the liver, spleen, kidney, bladder conditions, furunculosis, trauma, osteomyelitis, infected burns, and influenza. It also follows operations in a clean field. The

organisms producing it are colon bacillus, streptococcus, staphylococcus, pneumococcus, etc.

Pleural involvement secondary to subphrenic infection is frequent—75 per cent in Beye's cases. He reports 190 cases of empyema with only one subphrenic infection. This he thought followed injury to the diaphragm when the empyema was operated upon. In 24 subphrenic infections, there were 9 in which the abscess had ruptured into the pleura. This means that lymphatic drainage through the diaphragm is from below upward. These abscesses had existed for weeks, even months, before recognition.

The anatomical divisions of the area beneath the diaphragm are six—3 on each side of the falciform ligament. They are the anterior, the posterior, and the extraperitoneal. The extraperitoneal spaces are bound by reflections of the peritoneum, which, extending to right and left, are called the right and left coronary ligaments. On the left side, the posterior pocket is the lesser peritoneal cavity. Although on the right side, it is surprising how frequently suppurative appendicitis is followed by left-sided subphrenic abscess.

The diaphragm, a musculo-aponeurotic sheet, arises from the entire costal border, the xiphoid, the vertebral column, and the 12th rib. These muscle sheets combine into a central tendon extending across the mid-line on each side. Motor innervation is by the phrenics: sensory innervation is by the 6 lower intercostals, the sympathetics, and a few fibres in the phrenic nerves. Hoover in 1913 contributed an excellent paper on the function of the diaphragm. He observed its movements on experimental animals, and on patients in his wards in health and disease—with special reference to pericardial effus-



ions, emphysema, pleural and sub-phrenic accumulations. In quiet breathing, the scaleni and the intercostals elevate the ribs and widen the costal angle. The diaphragm in contracting narrows the costal angle. In subphrenic accumulations, the diaphragm is pushed up, and is at a mechanical disadvantage. Hence in deep inspiration, the costal angle is either not changed or is widened. He concludes: "Movements of the costal border during respiration give valuable aid in differentiating between supra- and sub-phrenic disease; also between pulmonary consolidation and pleurisy with effusion." Barclay X-rayed patients during inspiration and expiration, while standing, lying down, and hanging by the feet. The position of the diaphragm was changed little when the subject assumed the different postures.

Infection to the subphrenic area travels by direct extension, by the lymphatics, and by the blood stream. The extraperitoneal area is said to be most frequently invaded by way of the vessels in the falciform ligament. Location of the abscess is, right posterior in 60 per cent; left anterior in 20 per cent; retroperitoneal in 15 per cent of the cases.

The clinical history is most important, and cannot be overstressed. The onset may be insidious or sudden. Usually the course of events is about as follows: after operation or a severe abdominal attack without operation, the patient may do well for some days or weeks. Then occurs a rise of temperature, a chill or chilly sensations, followed by pain, sweating, hic-cough, maybe nausea, non-productive cough. The patient appears sick and in a few days begins to lose ground. He may have a healed wound, and have left the hospital. These symptoms may continue for weeks or months. The leucocytes are increased; anemia results, with prostration. There may be pain along the costal border, in the flank, in the shoulder, or the neck. Every symptom may point to a pleural involvement. In fact many cases have been mistaken for fluid in the chest or empyema. On physical examination the interspaces may be widened, and the chest wall may bulge. The flare of the costal border on the affected side may be increased, and tenderness may be present over the tip of the 12th rib,

and between the lower ribs in the back, with fullness. In late cases edema may be present. These signs depend largely on the location of the abscess. Litten's sign is usually absent; Grocco's sign present. One writer has used a sharp stroke on the costal border with 3 figures, as in percussion. On the rebound of the ribs, pain is felt. Liver dulness is increased. If gas is present (it occurs in 1-3 of the cases), there is a tympanitic note between the area of lung resonance and the liver dulness. Succussion has been demonstrated on shaking the patient, and on the left side by the heart beat. If the abscess is posterior, there is said to be a triangular layer of increased dulness in the mid-axillary region. In empyema the diaphragm is often pushed down, and the costal margin retracted. The heart is frequently displaced, but not in subphrenic abscess. Hoover has shown that movements of the costal margins can be demonstrated best by placing the thumbs on them, with the hands over the lower ribs. Only in this way can the movements be appreciated, and one side compared with the other. Often there is tenderness and rigidity of the upper abdominal muscles on the affected side. Jaundice nearly always means that a liver abscess has ruptured into the subphrenic pocket.

Whatever observations are made at the bedside must be supplemented by X-ray pictures and by the fluoroscope. Unless the diagnosis is certain, these examinations should be repeated, for the signs and symptoms change with fair rapidity. The fixed high-lying diaphragm, with the costophrenic angle acute, is very suggestive, especially if the outline is smooth. If it is irregular, pleural adhesions or malignancy of the liver may cause it. Air beneath the diaphragm with or without a fluid level, is diagnostic. X-ray examinations should be made in more than one position, vertical, supine, lateral. We must not expect too much from the Roentgenologist unless we have him in frequent consultation. Too often we demand that he take a single film and from that give us the diagnosis. In most cases this cannot be done. Pneumoperitoneum has been advocated by some authors and condemned by others. It should not be used unless the patient is in fairly good condi-

tion. Many times he is desperately ill, and must be handled as gently as possible. The diagnostic needle also has its advocates and opponents. If used properly—a moderate sized needle, and the patient on the operating table ready for a two-stage operation if pus is found—I can see little harm from its use. One patient, a physician, had 23 negative punctures. On the 24th, pus was found.

Operative approach to the abscess is by transpleural, trans-abdominal, and extra-peritoneal route. Nather and Ochsner urge the extra-peritoneal. Ochsner attributes the low mortality in his personal cases (10 per cent) to this procedure. The location of the abscess determines largely the method of approach. The details of operation cannot be taken up in the limited time for this paper, which is largely devoted to diagnosis.

The items I wish to stress are a careful clinical history with thorough and repeated physical and X-ray examinations. One writer has aptly said: In every abdominal case that is not doing well, think of subphrenic abscess.

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#### DISCUSSION

Dr. Floyd D. Rodgers, Columbia, S. C.:

Dr. Tyler has shown you cases of suspected subphrenic abscess or subphrenic accumulations. These cases, on closer study, were proven not to be subphrenic abscesses. In my discussion, I am going to reverse the order of things and show you some subphrenic accumulations that came to autopsy. Although they had been diagnosed early, the procedure that followed did not cure the patients.

You notice that in Dr. Tyler's patient No. 1 there were no changes in the base of the right lung, although you saw a well demarkated high diaphragm, but it is significant that there are no changes in the lung fields. However, in the X-ray plates of the following cases, I want to call your attention to the fact that each of these proven subphrenic or liver abscesses had a transudate in the base of the right lung. Dr. Tyler and I had some little discussion as to the nature of these changes in the lung fields. It is a resulting inflammatory condition in the base of the lung following pyogenic infections immediately below the diaphragm. The autopsy report on this case was abscess of the liver with extension through the diaphragm; the base of the lung eroded with extension into the bronchus. When this patient was seen, he was moribund, but the important inflammatory area above the diaphragm was present. The man died almost immediately and had a most massive abscess of the liver. I never saw anything to equal it, and, of course, nothing was effectual in his case.

On this next case, I have a large series of plates, the one that you see now being the first. You readily see that there is a transudate in the base of the right lung, with the accompanying high diaphragm. We went a little further in this case after we got a slight increase in the transudate, and made lateral plates. You will note that in the lateral plates, the left diaphragm goes back, making a normal curve and the right diaphragm extends backward and is high posteriorly. So we felt that his abscess was posteriorly placed. The next plate is one made with the Bucky diaphragm to see if we could locate a softened area in the liver which we did not see.

From this series of plates, you can see that it has been our experience that in a true subphrenic abscess there is usually a transudate in the base of the lung above. We believe that this is an important diagnostic point.

Dr. W. R. Dancy, 702 W. Jones St., Savannah, Ga.:

I rise to call your attention to amebic abscesses, in this connection. I do not think they have been mentioned yet, and in this connection I wish to cite one case which came under my observation at Johns Hopkins. I mention Johns Hopkins because there was a splendid group of diagnosticians there trying to diagnose this particular case. The man was anemic and was evidently quite ill. He had lost weight. His stools were examined and were absolutely nega-



tive for the ameba. The kidneys were negative. On examination of the chest, the physical signs were impaired over the right base. X-rays were taken, and a spherical mass was found in the right lower lobe of the lung. The liver was definitely not enlarged and not sensitive. The temperature was low—not absolutely normal, but not running above 100. That led us to the belief that possibly we had a cystic mass in that right lung. The blood count gave us nothing of importance, because there was no elevation of the leukocyte count. It was decided, in order to prove the diagnosis and in order to relieve the patient, who was steadily going to the bad, that an operation should be performed and this cyst, if it were a cyst, drained. The patient was prepared for operation the following morning and placed on the table. While taking the anesthetic he had a severe attack of coughing and a great mass of pus came from his mouth—from his lungs, of course. This was examined, and in it were found numerous amebae. The operation on the lung was done and the abscess opened and drained. Later another operation was done on the liver and the remnants of the abscess were found in the liver, and this was drained. It seems that the patient had a liver abscess due to the ameba; it was originally subdiaphragmatic, and the infection passed along the course of the lymphatics into the lung. There was no empyema; there was nothing about the lung; there was no elevation of the diaphragm on that side; and it made a very interesting case. The patient recovered.

The point I wish to emphasize is that we can have an abscess of the lung from a subdiaphragmatic infection without empyema, and we can have it due to the ameba coli without any infection by the usual organisms.

Dr. Tyler, closing the discussion:

I am glad to have had this discussion.

With regard to Dr. Dancy's remarks, I purposely omitted amebic abscess of the liver from my paper. Of course, the liver abscess does become subphrenic when it ruptures through the capsule of the liver and causes all these symptoms.

If I can keep you impressed with the possibility of subphrenic abscess, I think you will find it more frequently. The diagnosis is difficult.

## PENTOBARBITAL SODIUM AS AN OBSTETRICAL ANALGESIC

By

JACK D. PARKER, M.D.  
Greenville, S. C.

The expectant mother of today rightfully demands a far more painless labor than that experienced by her mother and grandmothers.

Fortunately the profession now has access to various drugs and their combinations, which, in the majority of instances, very satisfactorily meets these demands. And still more fortunately, they are met by use of agents proven to be without deleterious effects either upon the mother or baby, without interference with the contractility of the uterine musculature, and with agents simply administered.

Following the report of Irving et al in the January 1934 issue of *Surgery, Gynecology, and Obstetrics*, using 860 cases at the Boston Lying-In and the report of Averett of Philadelphia in the January 1934 issue of the *American Journal of Obstetrics and Gynecology*, we began the use of Pentobarbital sodium or Nembutal on the service and some private cases at the Greenville General Hospital.

Various barbituric acid derivatives have acquired a rather prominent place of late in the production of Obstetrical amnesia and analgesia, both alone and in combination with other drugs, mainly morphine derivatives and Scopolamine. Some have been hesitant about the use of the barbiturates due to the undetermined toxicity of the drug. They are rapidly absorbed and rather slowly eliminated by the liver and kidneys, and the degree of toxicity is apparently in inverse proportion to the rate of elimination. According to Averett, this does not hold true in the case of pentobarbital sodium, which is excreted much more rapidly than sodium amytal or Pernocton, and hence, of less toxicity. I am able to gather reports of its use in 287 obstetrical cases, and in what appears to be large dosage, and not one of them has exhibited any toxic symptoms, this considering pulse, blood pressure, respirations and urinalyses.

We have a series of 27 cases, 19 being white, and 8 being colored patients. All of the cases were primipara except one. The particular brand of pentobarbital sodium used was that of the trade name Nembutal, which was furnished gratis by the Abbott Laboratories. We began with the administration of 4 1-2 grains (3 capsules by mouth) when definite uterine contractions commenced or when the patient began to complain of pain. In 9 of the 27 cases it was necessary to give additional nembutal, either due to unusual restlessness, prolonged

labor, or continued complaint of pain. Nine grains was the greatest amount given, and this to one patient who had very weak irregular uterine contractions over a period of forty two hours. It is interesting to note that even over such a prolonged period this patient remembered nothing of her labor, the baby was delivered and cried spontaneously, and her puerperium was uneventful. The average amount given was 5.6 grains. In addition to the Nembutal, 9 of the 27 cases received Scopolamine in gr. 1-100 or gr. 1-150 dosages. Two additional private cases of two other members of the staff received 1-3 gr. of Pantopon.

To me the most important fact to be learned from this series, other than the appearance of any deleterious effect on the mother or baby, is the amount of amnesia experienced. Feeling that with the proper dosages and correct combination of Scopolamine, we can expect at least 9 out of 10 patients to remember none of the unpleasantness of labor, we plan to continue variations as to time and the amount of the drug administered. The per cent amnesia in this series of cases was estimated entirely from the statements of the patients themselves, and it has been a source of great satisfaction to hear these women say that they remembered taking the capsules and nothing else, awaking several hours after delivery to be informed that the baby had arrived. 18 out of our 27 cases, or 66 per cent remembered absolutely nothing about the labor—6 additional cases stated they remembered some such major incident as being transferred to the delivery room, being placed in position on the Gellhorn delivery table, or the placing of the mask over the face for nitrous oxide and oxygen during the actual delivery, but did not remember any of the pain or fatigue of labor. This seems sufficient to warrant a classification of complete amnesia for 24 of the 27 cases. 2 cases were classified as obtaining about 75 per cent amnesia, inasmuch as they stated that they recalled having some pain though not severe. One case is reported as a complete failure due to the late administration of the Nembutal, labor having progressed well into the second stage and this patient delivered within an hour after admission.

Following the discussion of the favorable feature of the drug, namely, amnesia, is that of the most unfavorable, restlessness and irrationality. This requires some person in constant attendance, preferably a nurse, but when this was not feasible in some of the service cases we allowed some of the family to stay by the bed to prevent the patient falling out or getting up from bed. These cases were very easily restrained and were not of the unruly type requiring force. The degree of restlessness has been divided into three divisions, none, moderate, and marked. 6 of the 27 cases exhibited no restlessness at all; 2 additional cases moderately restless responded beautifully to the administration of 1-3 gr. pantopon, quieting and cooperating well until delivery was terminated. 13 cases were moderately or slightly restless, requiring close observation, but otherwise not objectionable. 6 of the 27 cases exhibited marked restlessness, requiring some restraint, and 2 of them got out of bed before we instituted constant watching after giving the Nembutal. Neither of the 2 patients remembered anything at all about the particular incident or the labor. This is too high a per cent of marked restlessness, but I feel that the fault was in not repeating an additional 1 1-2 or 3 grains of Nembutal, and in not giving more Scopolamine earlier in the course of labor. Irving and his associates at Boston Lying-In state that a supplementary instillation of rectal ether is used to control marked restlessness in the cases at that institution where Pentobarbital and Scopolamine has been adopted as the standard method. Others have suggested the rectal instillation of Paraldehyde in olive oil, but as yet we have not used it.

Type of delivery: 17 of the 27 cases, all primipara except one delivered spontaneously. 10 of the cases were delivered by application of low forceps, which consisted mainly in lifting the head over the perineum. 2 of the 10 low forcep cases however were posterior positions. There were no other abnormal positions or conditions requiring other operative interference in the 27 cases, except the performance of 8 episiotomies.

Effect on babies: All of the 27 babies cried immediately upon delivery, but after the initial



cry 3 of them required slight resuscitation or removal of mucus from trachea. It is interesting to note that 2 of these 3 babies were the 2 that received 1-3 gr. pantopon.

**Puerperium:** There were no cases of post partum hemorrhage. All the mothers slept soundly for several hours after the delivery. The majority of the cases had been given nitrous oxide and oxygen for the actual delivery, altho several received only a whiff of ether or chloroform. 3 cases showed a slight temporary elevation of temperature, one due to a mastitis and two due apparently to a putrid endometritis. No evidence of any definite puerperal infection occurred in any of the 27 cases. The average length of labor in this group was 15 hours—this counted from the time the patient stated she first began having pains, and not from the time of the administration of the drug, so that no retardation of the progress of labor was noted in this series.

In conclusion, the only three disadvantages to the method described are: restlessness in some cases, use of low forceps required in a larger number, and it is not adaptable for use in the home. The first objection, as previously stated, can be overcome by use of larger dosages of Nembutal, by use of more frequent doses of Scopolamine, or the supplemental use of rectal ether. The second disadvantage I do not regard as of any consequence. The third is a very definite one, but I feel that the sooner we get away from home obstetrics, where possible, the better off we will be. Against these disadvantages, we have a method that will assure our patients a practically painless labor without any harm or danger—a method that does not retard labor—and one that has no ill effect upon the baby.

I wish to express my appreciation to Dr. Robert Dacus, Resident at Greenville General Hospital, for his aid in compilation of these statistics.

**Note:** Since this series was reported, we have about twenty-five additional cases and the results are the same. Scopolamine is used uniformly now.

## A DISCUSSION OF SOME OF THE FUNDAMENTAL PRINCIPLES IN CARING FOR A PATIENT WITH AN ACUTE ABDOMEN

By

S. E. HARMON, M.D.  
Columbia, S. C.

I have thought, studied and talked economics in connection with efficient scientific medicine so much and so long that I thought it wise to digress and discuss another very important scientific subject in medicine.

The first essential in caring for any one with an acute abdomen is rest in every way. Rest is especially paramount in this condition. Usually, the first symptom is pain, which is nature's signal that something has gone wrong, something out of the ordinary is taking place. Pain is a signal to the individual and to the physician, warning them so that they may look for and find the cause. One cannot very well correct or handle trouble until they know the cause; therefore, the physician should immediately set to work to find the cause. Usually pain followed by nausea and vomiting, depending of course, on the cause and severity. Constipation or diarrhea or dysentery either may be present in a percentage of cases. There are no set classical symptoms in all cases, or set of symptoms in any case.

Cool, sound, sane mature judgment is necessary in the study of these cases because there are many possibilities. While a study is being made, the patient should be placed in a comfortable bed at rest in every way with no drugs at all if practical to prevent. Certainly no laxatives or purgatives should be given under any circumstances. If absolutely necessary, and in some cases it is imperative, to give an opiate to relieve pain, it should be given hypodermically, very guardedly, so as not to mask the symptoms and give all concerned a false sense of security. The symptoms that nature is so obviously presenting should not be masked until the cause is found. Absolutely nothing should be given by mouth except small amounts of water and only in selected cases to quench thirst.

The abdominal organs cannot be placed at rest by putting work upon the stomach. Therefore, the stomach should be kept absolutely

empty while a study of the case is being made. To assist in relieving pain and discomfort in an acute abdomen, one may use diffused heat over the abdomen, dry or moist, though I prefer moist. Prolonged diffused heat quiets muscular contraction with relaxation. It soothes the nervous system and causes the patient to become very much more comfortable. Also causes an increase in leucocytes which is nature's bulwark of defense against infection. Also small, low, easy enemas of saline or soapsuds to relieve the lower bowel—say one quart in an adult, and in proportion in children—will do no harm and often produce a great deal of comfort until the cause is arrived at.

In selected cases, gastric lavage gives excellent results by placing the stomach and intestines at rest, and not infrequently is life saving.

By following these simple fundamental principles with these patients, their organs and tissues will be protected and the morbidity and mortality rate materially lowered. Of course, in studying patients with an acute abdomen, we must realize that there are two fundamental types—potential surgical and non-surgical—which require rare judgment and scientific study, which includes an easy physical examination with a blood, urine and often feces examination, microscopically. After all this has been carried out, in exceptional cases the physician is compelled to rely solely upon his five senses, and occasionally the sixth sense must be brought in to service in order to care for these patients intelligently and successfully.

Usually with a careful study, a correct diagnosis can be arrived at in a reasonable length of time. Time is not always the greatest asset in these cases. Occasionally we can only determine whether they are surgical or non-surgical, and act accordingly.

#### SUMMARY

Absolute rest in every way. No drugs except an opiate to relieve pain when absolutely essential, and then very guardedly until a careful study has been had, and a conservative line of procedure has been mapped out with a potential correct diagnosis made.

## ARTIFICIAL PNEUMOTHORAX

By

GRADY S. CLINKSCALES, M.D.  
Anderson, S. C.

The condition of Pneumothorax, air in the pleural space, has been recognized for a long time. At first only as a complication or sequel to some pathological process and as result of traumatic injuries.

Artificial pneumothorax as a therapeutic agent was first used by Forlanini in 1894. The frequency in the use of this therapeutic measure in the treatment of pulmonary tuberculosis varied, as all new methods of treatment and agents vary in their inception, until their worth or worthlessness is established. Some users were getting what they thought were favorable results while others experienced the reverse. There were, and for that matter are still, many factors that enter into the prognosis of pulmonary tuberculosis, so that the benefit of collapse therapy was difficult to evaluate. During the course of time many obstacles have been surmounted, much research work done and many studies carried out. The increased sanatoria treatment along with the free use of the X-ray and fluoroscope have been of inestimable value in reaching some definite conclusion as to the collapse therapy. This form of therapy must be measured by the results and the results surely have been gratifying for during the past few years it has increased in use from about 15 per cent in 1932 to 40 per cent in 1933 and now to about 70 per cent in adult sanatoria patients.

Artificial pneumothorax per se is a mechanical process but at the same time alters greatly the physiology of the circulatory and respiratory systems. The types of collapse may be considered as complete, where the entire pleural space may be filled causing a uniform compression of the lung tissue toward the hilum; then a partial collapse where the above degree of compression is not obtained and the obstacles most often encountered are pleural adhesions which may vary in number and extent even to such a degree that the pleural space is obliterated.

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\*Read before the Anderson County Medical Society, Anderson, S. C., October 9, 1935.



If air is injected into a normal pleural space, there will be a uniform pressure on the lung which will collapse to a degree, dependable on the amount used. As the air or gas is gradually absorbed, the compressed lung will re-expand uniformly and in proportion to the rate of absorption. The reason for this is the uniform compressibility and elasticity of the normal lung tissue. Now, where there is a diseased portion of the lung, this compression is not so uniform and there is a functional change with a lessening of the physical properties of compression and elasticity. As a result these diseased areas will not compress nor re-expand as freely and as completely as the healthy adjacent tissues. With the initial pneumothorax, it is the healthy lung that compresses while the diseased part gives very slowly. It requires repeated inflations to finally force in that part that is diseased. Likewise, that same area will re-expand poorly due to loss of elasticity and to a tendency to rapid fibrosis of the inflamed tissue following so much surface approximation. The healthy lung tissue has a tendency to envelope the diseased portion, driving it in. In the course of time, because of the decreased and progressively decreasing elasticity and especially the increase tendency to fibrosis in the affected lung tissue under gradual compression, the involved part will re-expand less and less. At the same time, the healthy lung tissue, the recoil of which remains practically unimpaired while under compression, will re-expand as rapidly as the fall in intra pleural pressure will allow, following the absorption of air. It follows that after a shorter or longer period of compression, the injected air will accumulate about the involved portion of the lung as if selectively compressing it, which is spoken of as selective collapse, and in the course of time there is a drying out with a permanent impaired functional area.

Compression of the lung causes the evacuation of and prevents the accumulation of the fluid excretions thus giving relief to the usual harrassing cough and expectoration. A positive sputum is often and quickly rendered negative. Other happy results to be expected are favorable influence on temperature and general feeling. The caseous areas are made drier. The

infected areas are reduced in size thus bringing about a condition that favors fibrosis and atelectasis of the lung from the relaxation and surface approximation. These changes cause lymphatic stasis, thus limiting absorption of the toxic products. This reduction in absorption frees to that extent the nervous system and the other organs of the body from chronic poisoning which is responsible for the constitutional symptoms.

The indications for instituting collapse therapy are now of a much wider distribution. Formerly, it was used as a last resort. I believe that the favorable results are due to an early beginning of this form of treatment. It is particularly indicated in the very acute unilateral cases; cases of moderately advanced, active lesion in one lung with no pathology or an inactive process in the opposite lung, one that has not responded to the usual rest treatment; again those cases where there is cavity formation even in the presence of activity in the contralateral lung. It has been shown that the activity in the opposite lung from the side being compressed with the cavity, is not only not increased, but is lessened. In cases where there is reported hemoptysis or a pulmonary hemorrhage, compression has the most desired effect.

The type of cases that would not demand the collapse therapy are those of advanced lesions, particularly bilateral ones; the child, not before the teen age; tubercular enteritis. In cases of cardiac lesions that would be liable to further embarrassment of the heart; very early minimal cases that do not show in a short time evidences of improvement symptomatically and a clearing of the diseased process from the X-ray standpoint and cases that prove to have extensive pleural adhesions.

There were many reports of a statistical nature made at the last National Tuberculosis Association Meeting showing the result of collapse therapy. I take the liberty to present Dr. Alexander's report of 823 consecutive cases that were discharged from their institution at Ann Arbor, Michigan: Collapse therapy had been used in 72 per cent of these cases. At the time of discharge 47 per cent were arrested or apparently arrested, 14 per cent quiescent, 6 per

cent improved, 15 per cent unimproved or worse and 17 per cent were dead. Comparing these figures with those compiled by the National Tuberculosis Association in 1931 on 42,000 patients discharged from many sanatoria and on whom only about 10 per cent received collapse therapy were these results; 17 per cent were arrested or apparently arrested, 41 per cent quiescent or improved, 19 per cent unimproved or worse, and 23 per cent were dead. The percentage in the arrested and apparently arrested cases in whom extensive collapse therapy was used, is more than 2.5 times those cases who received little collapse therapy. The difference is greater yet when you consider that in the former group there were 11 per cent minimal

cases and 57 per cent who had far advanced tuberculosis on admission, whereas the corresponding figures in the other group were 15 per cent minimal and 49 per cent for the advanced cases.

If we accept as a correct measure that a tubercular joint should be splinted and immobilized, there is no reason why similar measures should not be used in a case of open tuberculosis. It is not claimed that collapse therapy is to assume the entire role of treatment. It is but an additional measure along with the indispensable aids of rest, plenty of nourishing foods, fresh air, good hygienic environments, and an encouraging and happy atmosphere.

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## SOCIETY REPORTS

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### RIDGE MEDICAL SOCIETY MEETING

The Ridge Medical Society met Monday, October the twenty-first at seven-thirty o'clock, P. M., Batesburg, S. C.

We had a good attendance with two visitors, Dr. D. S. Asbill and Dr. B. Rubinowitz of Columbia.

Resolutions of appreciation of Dr. E. C. Ridgell and regret at his death were presented by Dr. E. P. Taylor and Dr. A. L. Ballenger and were unanimously adopted.

Dr. O. P. Wise reported a case of screw-worm infection in the face of a man who was afflicted with cancer.

This report elicited much discussion and from various angles and reports were made by Drs. Asbill, Ballenger and others of screw-worm infections in animals.

This meeting would have been worth while if nothing else had transpired but we also had a very interesting instructive and practical address on etiology of diseases of the rectum by Dr. B. Rubinowitz. His address was enjoyed and highly commended.

Supper was served in the Batesburg Hotel where good fellowship reigned.

Reverend Maxie Collins, who recently located here was our guest for supper.

Dr. S. O. Pruitt of Pennsylvania visited his family here last week-end.

The Ladies Auxiliary was entertained in the home of Mrs. W. P. Timmerman and had an interesting and well attended meeting.

Mrs. C. E. Owens, President of the State Auxiliary, and Mrs. B. Kendall of Columbia were visitors.

Mrs. Owens made an excellent address which was highly appreciated and enjoyed.

Drs. Wise and Waters were appointed program committee for next meeting.

W. P. Timmerman, M.D., Secretary.

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### CHICKEN SUPPER FOR THE DOCTORS

Batesburg, S. C.

The Ridge Medical Association and the Ridge Medical Auxiliary were entertained in the home of Dr. and Mrs. E. C. Ridgell, August 19, 1935. At this time the ladies of the Auxiliary served the members of the Association with a delicious chicken supper. Dr. Wm. Weston of Columbia was the guest speaker—he gave a very timely and interesting address. Miss Florence Hartley rendered two beautiful piano solos.



# THE JOURNAL

OF THE

## South Carolina Medical Association

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## NOVEMBER, 1935

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DR. J. I. WARING ELECTED ASSISTANT EDITOR OF  
THE JOURNAL

A well merited honor was accorded Dr. Waring by the Council October 17 in electing him Assistant to the Editor in Chief. Dr. Waring has for a number of years been an Associate Editor of the well known department in the Journal—South Caroliniana. This department was established by the initiative of Dr. Waring

himself and designed for the first time to bring together in one place abstracts of the writings of the members of the profession in South Carolina as gleaned from Journals and books in any part of the world. This new departure met with instant favor on the part of the readers of the Journal. Dr. Waring will bring to the editorial columns of the journal a high type of scientific contributions as a result of his ripe scholarship and wide knowledge of medical literature.

After graduation from the Episcopal High School of Virginia in 1914 Dr. Waring continued his academic education at the College of Charleston and in 1917, graduated with an A.B. degree and was first honor man. In 1921 he graduated from the Medical College of the State of South Carolina, winning second honor. He had the benefit following his graduation of internships in various hospitals in the city of Charleston, including the Roper Hospital. After deciding to prepare himself for Pediatric practice, his graduate education included extended service at the Willard Parker Hospital and the Bellevue Hospital, New York, and Vanderbilt University Hospital, Nashville. Dr. Waring had an unusual service in public health for the Commonwealth Fund in Tennessee for a period of three years, where he was director of Pediatric Public Health activities. Upon returning to his native State and his native city, Dr. Waring became connected with the Medical College, where he rapidly rose through the various grades to be an Assistant Professor of Pediatrics. Dr. Waring is visiting Pediatrician to many of the hospitals and dispensaries in the city of Charleston. He is a member of numerous scientific societies both within and without the State.

Dr. Waring has made important contributions not only to the Journal of the South Carolina Medical Association, but to a large number of the most outstanding scientific publications in the United States. He has enriched the storehouse of medical history in this country, notably, through his contributions to the Annals of Medical History, one of the most widely known historical journals in the world. It is obvious that the Journal of the South Carolina Medical Association is most fortunate in having Dr. Waring assume this close relationship with the Editor in Chief, and we bespeak for him the loyal support of every doctor in South Carolina.

## SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

### "CHRONIC CYSTIC MASTITIS"

In the past few years our concept of the nature of chronic cystic mastitis has almost completely changed. This has been due in great part to recent advances in the knowledge of the endocrine glands, particularly of the ovary and the pituitary. The term chronic cystic mastitis implies that the process is of an inflammatory nature caused by a low grade infection. For a long time this idea held sway. There is now a great deal of evidence that this is not the case, but that the changes in these breasts are the results of functional derangements. In a recent article published in the *American Journal of Surgery* XXVIII:452, May 1935, Dr. J. Stewart of Philadelphia supports this theory in a convincing manner and presents hypotheses concerning the etiology of the commonly associated adenofibromas and similar tumors.

The breasts undergo changes in the menstrual cycle similar to those in the uterus. They seem to be controlled by hormones from the graafian follicle and the corpus luteum which in turn are controlled by the pituitary. Somewhere between the fifth and fifteenth day of the menstrual cycle the breast is in the resting stage. At this time the fibrous stroma predominates and the epithelial elements consists of ducts and occasional acini. As the next menstrual period approaches the ducts enlarge and give off branches; new acini develop; the fibrous tissue softens so as to allow for expansion of the epithelial elements. Next is the period of involution which begins just before the next menstrual flow. Here the lining cells of the ducts and acini degenerate and are shed into the lumen of the ducts to be absorbed—not excreted, as rarely is there a post menstrual discharge from the nipple. Should pregnancy intervene, the premenstrual hypertrophy continues and lactation changes begin. Involution takes place after lactation ceases, however while most of the acini disappear the gland does not quite

return to its former virginal state. After the menopause further involution occurs.

The breast is in an almost continuous state of change and varies greatly according to the stage of the menstrual cycle, lactation, or the menopause. As these changes are under the control of the ovarian hormones it is reasonable to believe that aberrations in their function would result in effects upon the breast just as it does upon the uterus. According to this view chronic cystic mastitis would be considered as the result of subinvolution. The primary condition being a hyperplasia of the epithelial or fibrous elements, either singly or in various combinations; the cysts being a secondary development resulting from retention. In the early stages in particular the condition varies a great deal with the menstrual cycle, and this should be taken into account in making the diagnosis.

As in other conditions tissues may be affected locally or diffusely, in the breast there may be local areas of hyperplasia. The author considers this a likely explanation of the origin of that group of benign tumors consisting of adenoma, adenofibroma and fibroadenoma. The argument is not carried so far as to attribute to this hormonal dysfunction the cause of cancer, nor is it even maintained that cancer develops from a pre-existing chronic cystic mastitis. However the fact remains that cancer is associated with chronic cystic mastitis in 15 to 20 per cent of the cases. Further knowledge concerning the etiology of cancer must be obtained before a causative relationship could be established.

On account of its frequent association with cancer it is important that we establish some safe working rule to guide in the treatment of chronic cystic mastitis and that group of benign tumors which not unlikely have a similar origin. The author suggests the following: local excision of adenofibromas; for papillary cystadenomas, representing a further advance in epithelial activity in women over 35, ampu-



tation of the breast; in chronic cystic mastitis in patients under 35, where the lump or lumps vary in size and become smaller during resting phase, no surgical treatment is necessary—but where the lump persists or becomes larger it should be excised for microscopic study; in patients over 35 where after two months observation the lump or lumps do not change appreciably, amputation of the breast should be

done with facilities at hand for frozen section examinations of suspicious areas. Emphasis is again placed upon early operation as giving the only reasonable hope of cure in cancer. To quote Dr. Rodman—"The more I see and operate on cancer of the breast when it can without question be diagnosed as such, the more discouraged I become over the possibility of a radical cure."

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## EYE, EAR, NOSE AND THROAT

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J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

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### USE OF COLEY'S MIXED TOXINS IN OPHTHALMOLOGY

Dr. J. Levine

Arch. of Ophthal., Oct., 1935, p. 554

In the final analysis recovery from an infection depends upon vital resistance. Vital resistance, on the other hand, is such a variable and sometimes deficient factor that it is of little value. Hence there have been many service stations, places for stepping up the strength of the vital current, similar to those that Michel Lupin invented for electrical use. Each has had its advocates—and objectors. Milk, Omnadin, Aolin, and Typhoid vaccine. Dr. Joseph Levine, in the Archives of Ophthalmology, Oct., 1935, writes another article on Coley's fluid (the first was in the Archives of Ophthalmology, 6:75, July, 1931). It is a concentrated bacterial vaccine, used intramuscularly, deltoid, in a 1 to 3 mm. (0.06 to 0.18 cc) dosage. Repeated every third day as necessary, depending upon the response and reaction, just as with other

forms of foreign protein. A tuberculin syringe makes it convenient to use. The reaction may be controlled by applications of cold water to the side of the injection. The fever, 101 to 103, does not come on for six hours, giving the patient time to get home. The dose is small and the cost is little. No complications have been reported.

The usual precautions in diabetic, arteriosclerotic, tuberculous, nephritic, and cachectic patients are to be observed.

Coley's fluid is beneficial in cases of: acute iritis; keratitis; kerato-iritis; cyclitis; iridocyclitis; uveitis; secondary glaucoma due to any one of the preceding conditions; and sympathetic ophthalmia. The results are often astounding, as all who have used it can attest.

Do not use salicylates at the same time, for they prevent the rise of temperature, and Dr. Levine feels that a temperature rise is essential to get beneficial results. So do not fear the temperature rise, and hospitalization is unnecessary.

## PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 294 (26428) SEPTEMBER  
27, 1935

*Service of Dr. Waring*

Student Able (presenting case history):

Negro female, age 1 year 4 months, admitted 5-4-35, died 5-7-35.

Mother stated that child had had almost a continuous cold and fever since the first of January, 1935. Cough developed in February. On 4-11-35 child was brought to clinic, the mother stating that the child had been having "convulsions" (no description given) every day for one week. Both ear drums were thought to be bulging at that time, and both were incised but no pus was obtained. Temp. 101.6 at that time. 5 days later the ears were not discharging, and no cause for the continued fever (101) could be found after a complete examination. 4 days before admission the baby's body became stiff, with the head thrown back. The following day it was noted that the right side of the baby's body was useless and that there was no "feeling" in it. Unable to take nourishment since that date.

Diet: Breast-fed until 13 months, with cereals, potatoes and orange juice since. No cod liver oil. No inoculations or vaccines.

Family History: Mother had had a positive Wassermann, received several "shots". There had been 2 miscarriages. Grandfather and maternal uncle had tuberculosis, exposure not stated.

Physical Examination: A well developed but poorly nourished child, Temp. 101, pulse 152, resp. 28. Skin, head, sinuses negative. Right pupil irregular, does not react to light, posterior synechiae present. Ear drums slightly injected. Tonsils markedly enlarged. Anterior cervical glands palpable. No positive findings in heart, lungs, mediastinum or abdomen. A flaccid paralysis of right arm and leg noted, with anesthesia. Both knee-jerks hyperactive, no ankle clonus, no Babinski. Kernigs positive.

Laboratory: Urine—Albumin 1 plus, 2-3 pus

cells to H.P.F., 2-3 erythrocytes to H.P.F., other constituents normal. Blood (5-5): Hb. 82 per cent (Dare), WBC 17,200, polys 88 per cent, lymphs 9 per cent, monos 1 per cent, eosinos 1 per cent, basos 1 per cent. Spinal fluid (5-4): pressure "increased", fluid clear, total cells 60 per cu. mm., lymphs 60 per cent, polys 40 per cent, globulin 3 plus, no organisms seen on stained smear, culture "staphylococcus present"?. Collodial gold curve 0001112100; spinal fluid Wassermann negative. Spinal fluid (5-5-35): pressure "increased", clear, total cells 28 per cu. mm., lymphs 80 per cent, polys 20 per cent, globulin 2 plus, sugar 1 plus. No organisms seen on stained smear. Culture "staphylococcus present"(?). Stool examination normal.

Course: Temperature remained about the same, falling gradually during last 24 hrs., pulse became more rapid, finally imperceptible. Respirations 48-72 for last 52 hrs. Purulent exudate in both eyes for last 2 days. Convulsive movements noted, not described. Ceased to breathe on 5-7-35 at 11:55 A.M.

Dr. Robert Wilson: Mr. Gasner, will you open the discussion?

Student Gasner: We have a history of a child 16 months old, with opisthotonos present for 4 days before admission, and with a positive Kernig's sign. It appears very probable that the child had a meningitis of some form, and the difficulty is to determine the type of meningitis. It could be a tuberculous meningitis, a syphilitic meningitis, a meningococcus meningitis, or a brain abscess following middle ear infection.

Against abscess of the brain following middle ear infection, we have the record to show that the ear infection was questionable. If a meningitis followed brain abscess, we would expect a frankly cloudy spinal fluid, with a higher cell count and a predominance of polymorphonuclear cells.

A meningococcus meningitis would be expected to give a daily rise in temperature above



the highest level recorded in this case. Purpuric spots would probably have been noted in the skin. More important than these facts, however, is the nature of the spinal fluid, without the frankly purulent fluid, the high poly count, and without the organisms being found in the fluid, as would certainly be expected this late in a case of meningococcus meningitis.

If this were a case of syphilitic meningitis, we would expect other signs of congenital syphilis to have been present, as an enlarged liver or spleen, or a periostitis. The fact that the spinal fluid Wassermann was negative is of some importance, altho the negative reaction does not exclude the possibility of syphilis.

Coming back, then, to the possibility of tuberculous meningitis, we have here a family history of tuberculosis, altho it is not stated whether or not the child has been exposed to the disease. There is a history of a "cold" and fever for several months before the onset of the meningeal symptoms. The spinal fluid findings are quite characteristic of tuberculous meningitis. The convulsions were doubtless due to an irritative process in the meninges, before the actual onset of the severe lesion there. The hemiplegia developed later, when the inflammatory process was well established.

I neglected to mention the possibility of poliomyelitis before, but there seems to be little to suggest that diagnosis. To begin with a hemiplegia would be uncommon in that disease. The deep reflexes should be abolished if the lesion were in the lower motor neurone instead of the upper.

Summing up, it seems to me that, by exclusion, the diagnosis of tuberculous meningitis must be made.

Dr. Wilson: What influence does the family history of tuberculosis have upon your diagnosis?

Student Gasner: The history of familial tuberculosis would not be important if we could exclude the possibility of exposure to the disease but we cannot rule that out in this case.

Dr. Wilson: Mr. Baker, what are your ideas about the case?

Student Baker: I believe that most of the recorded facts in the case point towards tuberculosis. The ear infection may have been a

non-suppurative otitis, and possibly itself a tuberculous manifestation. It is not unlikely that a miliary tuberculosis was present, as tuberculous meningitis is usually part of a miliary tuberculosis. The nature of the spinal fluid, without cloudiness, moderate increase of cells, with lymphocytes predominating, suggests tuberculous meningitis. The colloidal gold curve, while not characteristic, is not an unusual one for this condition. I believe the primary source of the dissemination was in the lungs.

Dr. Wilson: Mr. Gasner, I didn't ask you for your idea as to the primary source. Where do you judge it was?

Student Gasner: I believe that it was in the lung. On the other hand, it could have been in the lymph glands; the cervical nodes were palpable.

Dr. Wilson: Mr. Goodlett, what do you think of the case?

Student Goodlett: I am in favor of the tuberculous explanation of the case, and believe that the primary focus was in the lungs; there is a history of family exposure, of a cough and fever for four months. Termination by miliary tuberculosis and a tuberculous meningitis is common in such cases.

Dr. Wilson: As the clinician who handled this case is not here, and as Mr. Able is his proxy, we will get him to read the final diagnosis as recorded on the chart, and to defend it.

Student Able: The clinical diagnosis recorded are (reading): "Tuberculous Encephalitis, Tuberculous Meningitis, Tuberculosis of the Lung, Diffuse Tuberculosis."

When tuberculous meningitis is present, it can be assumed that there is a generalized dissemination, as the bacilli must reach the brain by the blood stream, and there is no reason for them to choose the vessels to the brain rather than those to other organs. While no tuberculosis was found in the lungs by physical examination, and the patient died before her x-ray was taken, still pulmonary tuberculosis can be diagnosed by inference; there are symptoms pointing to the lungs, there is a probability of exposure by inhalation. Too, the lungs are the commonest primary source.

Dr. Wilson: There is no record of any discharge from the ears; in fact the evidence of

ear disease is very scant. However, we know that meningitis occasionally does develop following otitis media, usually due to a pneumococcus, commonly the Type III pneumococcus. How would you rule out such a possibility?

Student Able: In the first place, I would expect that there would be definite evidence of otitis, and that the myringotomy would have shown pus. With a pneumococcus meningitis, the temperature would have been higher. And even more important, the spinal fluid would have been more cloudy, and the polymorphonuclears would have predominated instead of the lymphocytes.

Dr. Johnson: As regards the laboratory findings here, the spinal fluid suggests a chronic condition, as a tuberculous meningitis, an encephalitis or a poliomyelitis. These cannot be differentiated on the basis of a cellular study of the spinal fluid. But if a quantitative determination of the chlorides and the sugar in the spinal fluid had been done, and these had been found to be low, that would have been rather definite evidence in favor of tuberculous meningitis rather than the other two conditions. The failure to find tubercle bacilli in the spinal fluid is not so important; in order to find them, they must be searched for a long time, even in specimens that have been concentrated. The colloidal gold curve also suggests a chronic condition, and is also not characteristic of any one condition; syphilis and tuberculosis may both give this slight rise in the middle portion of the curve.

It is probable that the staphylococcus that was cultured from the spinal fluid twice represents a contamination, as the staphylococcus gives a purulent meningitis, and the fluid would then have been cloudy, with many polys present.

Dr. Cannon: I want to comment on something that seems to have been carefully passed over in the various discussions, and the thing that is to me the most outstanding part of the case. That is the hemiplegia. No generalized process, limited to the meninges, would be apt to give a hemiplegia. Rather the process would have to extend into the brain itself. The term "tuberculous encephalitis" that has been mentioned several times might conceivably do it, but a diffuse inflammation of the brain due to

the tubercle bacillus, which the term implies, is probably exceedingly rare. It seems to me that there is a localized tuberculous process involving the cortex of the brain as well as the meninges, and probably of the order of a tuberculoma.

Dr. Wilson: Mr. Able, how about that hemiplegia?

Student Able: I think that the cortex of the brain must have been involved as well as the meninges, and that the lesion must have been in the motor area of the left cerebral hemisphere.

Dr. Wilson: The actual naming of the process in the brain is not important, except that we must conclude whether or not the process was tuberculous. It may be a tuberculous encephalitis, or a tuberculoma of the brain with a compression of the motor area. Hemiplegia, of course, is not common in a simple case of tuberculous meningitis. The possibility of cerebral hemorrhage in this infant has not been mentioned. That is a possibility, but unlikely.

Student Pernwerth: Will you explain the hyperactive reflexes in the presence of a flaccid paralysis?

Dr. Wilson: The first stage of a paralysis of upper motor neurone origin is usually flaccid, followed later by spasticity. The reflexes in this early stage are variable.

Dr. Lynch: We talk much about "childhood tuberculosis," its peculiar anatomical distribution and its course, differing from the "adult" form of tuberculosis. Only the initial infection by the tubercle bacillus gives this type of complex, and, as most of us are first infected in early childhood, that term is used, altho the same complex will occur in the infected adult if he has not been previously exposed.

The reason for the difference between the childhood and the adult forms is to be found in the lack of acquiring immunity in the former. There is no attempt at localization of the process by fibrosis in the childhood type, and caseation extends until the body is able to throw off the infection, to build up an immunity which helps to localize the infection, or else succumbs to it. As caseation progresses, the bacilli pass thru the lymphatic channels to regional lymph glands, and caseation is set up there. If not



arrested at this point, the bacilli commonly enter the blood stream by the lymphatic route, and a generalized blood-borne dissemination will result. Childhood tuberculosis, at least in the negro, is commonly fatal.

The case under discussion showed the typical pulmonary lesion of childhood tuberculosis. There was a massive caseation of the whole right upper lobe, with partial liquefaction, and sloughing, resulting in a small cavity. The draining lymph nodes, bronchial, tracheo-bronchial and mediastinal, were greatly enlarged and caseous. The lung, as well as almost all the other organs, showed a miliary tuberculosis as well. In this case the tuberculous meningitis was part of a generalized miliary tuberculosis, and that is the usual finding.

The unusual clinical picture in this case was the result of the unusual distribution of the intracranial lesions.

As you can see here (demonstrating autopsy specimens), the motor area of the left side of the brain is heavily studded with tubercles, not of the usual miliary form, but much larger, and the caseation extends into the cortex for several millimeters. This may represent the "tuberculous encephalitis" that has been mentioned today, but that term is not a good one, as the lesion here is simply an extension from the meninges into the cerebrum, and not the wide-

spread inflammation that the term "encephalitis" implies. While the lesion here is hardly large enough to call a tuberculoma, which grossly resembles a tumor, still it is certainly much more than the ordinary meningitis. There is also a similar involvement in the occipital lobe of the left side, about the calcarine fissure. In an adult that would probably result in a homonymous hemianopsia, but in a child of this age, that would not be recognized.

Besides the extensive caseation of the right upper lobe of the lung, and the miliary tuberculosis of all lobes, there was an early tuberculous pneumonia of the upper lobe on the left, with a consolidation that grossly resembled that of pneumococcus lobar pneumonia.

The relatively sudden onset of the hemiplegia in this case may have been due to a thrombosis within the involved portion of the brain; this was evident in the microscopic sections, and was associated with an actual arteritis.

The anesthesia recorded in this case has not been commented on; it may not be significant. The cortical lesion did extend anterior to the fissure of Rolando for a short distance, into the sensory gyrus. But a child nearly in coma, who can not withdraw a stimulated limb because of paralysis, may appear to have an anesthesia without one being present.

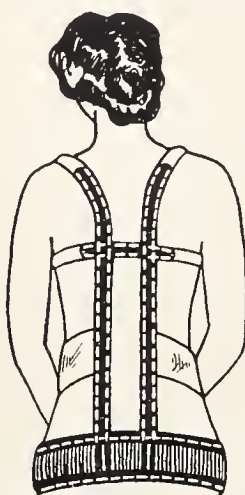
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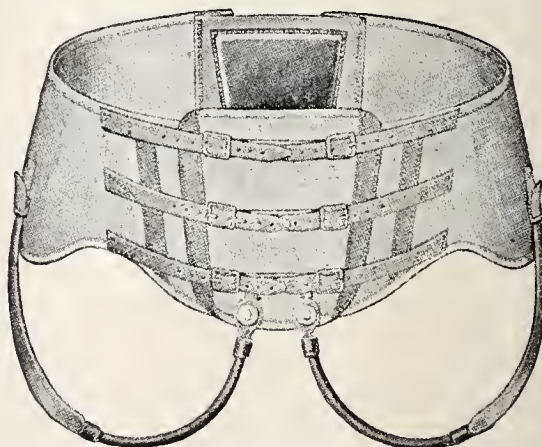
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## OBSTETRICS AND GYNECOLOGY

J. D. GUESS, M.D., GREENVILLE, S. C.

Acting under authority of a resolution adopted by the Council at the last meeting of the State Association, Dr. Samuel E. Harmon, has appointed a committee on maternal health and child welfare. Dr. Robert E. Seibels is the chairman of this committee. This committee has been instructed to make a study of the causes which underlie the high maternal and infant mortality in our state, and to recommend, so far as it can, corrective measures. It will maintain liaison with the American Committee on Maternal Welfare, Inc. and cooperate with it in its national program.

Dr. Seibels' committee, acting under the leadership of its energetic and able chairman, has already done much preliminary work. The cooperation and assistance of the executive committee of the State Board of Health has been sought and willingly granted, and Dr. Adams Hayne, State Health officer, has asked the health unit in each county, where one exists, to assist in the work of the committee, so far as it is able.

The committee has decided that its first task should be a detailed survey of the maternal deaths which occurred in South Carolina during the fiscal year 1934-1935. This is similar to surveys already completed in New York, Pennsylvania and Georgia. This survey should show the effect of the use of midwives upon maternal mortality. It should indicate what relationship exists between lack of prenatal medical supervision and an increased mortality, and it should disclose a percentage (10 percent in Georgia) of deaths, classified as parturitional, in which pregnancy was simply coincidental rather than the cause of death.

In order for this survey to be of real value it has to be both detailed and comprehensive, and for it to be so, the committee must have the cordial and whole hearted cooperation of doctors in attendance upon patients who died during the period under study. There will be no effort to criticise individual doctors concerned in their

methods of handling maternity cases. The purpose is purely fact finding. It is realized by every member of the committee, each of whom had maternal deaths occurring in the period to be studied, that adverse conditions, and lack of adequate facilities may vitiate the best personal skill and judgment. They know too that ignorance upon the part of the patient, preventing intelligent cooperation with the physician, is necessarily a factor, and frequently a major factor in the outcome of any given case. How great a factor this condition is as a statewide cause of death, the committee will attempt to determine.

This survey will be made without expense to the State association, but at a great cost in time and energy upon the part of the members of the committee. The sympathetic cooperation of the doctors who will be interviewed during the survey is earnestly requested.

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The Medical Auxiliary to the Oconee County Medical Association met with Mrs. E. C. Doyle on November 1st, in Seneca, S. C.

The meeting was called to order by the President, Mrs. E. C. Doyle.

Roll call was answered by five members, who gave the name of their favorite medicine.

Minutes of the last meeting were read and approved.

The Treasurer, Mrs. J. W. Bell, reported:

Dues paid .....	\$9.00
Student Loan Fund .....	6.00
Birthday Fund .....	2.68
D. A. R. Schools Bed Fund .....	2.00
Paid out Student Fund .....	\$6.00

Balance on hand .....\$13.68

Contributions made were as follows: Mrs. E. A. Hines contributed a box of clothing for the needy to the County Nurse, Miss Margaret Harry.

D. A. R. School Bed Fund contributions were: Five dollars by Mrs. E. C. Doyle as proceeds from rummage sale held by Mesdames Doyle, Hines and Marett.

One dollar, Mrs. J. E. Orr. One dollar, Mrs. Wendell Brennecke.

Visitors introduced and welcomed by the President were Mrs. C. N. Gignilat of Seneca, S. C., Mrs. Osborne of Spartanburg, and Mrs. Owens of Sumter, S. C.

The resignation of Mrs. J. W. Bell as Treasurer was presented and accepted with regrets. Mrs. Wendell Brennecke was elected to fill her unexpired term.

Communication was read from Mrs. James D. Lester, who asks that the Auxiliary members awaken to the value and necessity of in-

struction of hygiene in the schools, and their cooperation in carrying on this great work.

#### *Program*

Reading—Doctor's Wives, By Mrs. E. A. Hines. In her most charming way Mrs. Hines paid a tribute to the Doctors' Wives.

A beautiful and inspiring thought was brought to us on "All Saint's Day", by the rendition of "The Legend of the Holy Shadow."

Brief Talks—Saddle Back Days, Mesdames Bell, Doyle, Hines, and Osborne.

At the conclusion of the program the meeting adjourned, followed by the social hour.

A delicious salad course with Russian tea was served by the hostess.

Mrs. E. C. Doyle, President.

Mrs. Wendell S. Brennecke, Sec. & Treas.

#### STATE MEDICAL AUXILIARY BOARD ENTERTAINED HERE

At 1 o'clock yesterday, a lovely luncheon was given in the English room of the Hotel Columbia by the members of the auxiliary to the Richland County Medical society, after the meeting of the medical auxiliary's state executive board. Mrs. Clarence E. Owens of Columbia, state president of the auxiliary to the South Carolina Medical society, was the honor guest at the luncheon, which was in charge of Mrs. Ben Wyman and Mrs. P. Eugene Payne. Two large green bowls of vari-colored chrysanthemums adorned the table.

Invited to be present were the following women who are serving the state auxiliary in various capacities and who are members of the executive board: Mrs. Frank Strait, the state auxiliary's president-elect; Mrs. J. Warren White of Greenville, state vice president; Mrs. Izard Josey, Columbia, state secretary; Mrs. Thomas Pitts, Columbia, state treasurer; Mrs. Riddick, Ackerman, Walterboro; Mrs. Price Timmerman of Batesburg, Mrs. L. J. Blake, Spartanburg; Mrs. Shippey, Rock Hill; Mrs. J. R. Dunn, Sumter, state counsellors; Mrs. L. O. Mauldin, and Mrs. C. P. Corn, both of Greenville, Mrs. E. C. Doyle, Seneca; Mrs. A.

O. Holman, Timmons ville; Mrs. W. C. Abel, Columbia; Mrs. H. M. Stuckey, Sumter, state chairman; Mrs. J. Carroll Brown, Walterboro; Mrs. J. D. Ariail, Greenville; Mrs. J. C. Pepper, Easley; Mrs. Barton, Anderson, Mrs. Roddey Miller, Rock Hill; Mrs. W. C. Whitesides, York; Mrs. O. T. Finklea, Florence, co-presidents.

From the State Sept. 14, 1935.

#### RIDGE MEDICAL AUXILIARY

The Ridge Medical Auxiliary met with Mrs. W. P. Timmerman, October 21, 1935. The regular program was called off and the meeting turned over to the State Medical Auxiliary President—Mrs. C. E. Owens of Columbia. Mrs. Owens is a very vivacious and charming speaker. Her address on the work of the Auxiliary was quite interesting and instructive. She explained the different lines of work of the Auxiliary. She stressed the Student Loan Fund. At the close of the meeting, the hostess assisted by her daughter Mrs. Dickert served a delicious chicken salad course.

The Ridge Medical Auxiliary holds its regular meetings every two months at the home of one of its members. A committee is elected to plan a year book—each member is presented with a copy. These are the subjects on which papers are to be written by members of this Auxiliary during the present year: "First Aid in Accidents or Sudden Illness of Children." "Dr. Crawford Long." "Life of a Doctor's Wife in the Past and Present." "Rheumatism." "First Aid in Accidents" or Sudden

Illness of Adults." "How Can a Doctor's Wife Help her Husband?" "Insomnia." "Accidents That May Be Avoided." "Aids and Cures for T. B. Sufferers."

The Secretary collects reports of the activities of the members on such subjects as visits and flowers to the sick, trays and rides, garments, kind deeds, etc. The Student Loan Fund and plans for raising money are discussed. In addition to two papers at each meeting, special music is rendered and readings are given, sometimes a contest is enjoyed. The entertaining hostess serves delicious refreshments and the Auxiliary enjoys a social hour. The meetings are so interesting the members of the Auxiliary look forward with pleasure to the meetings of the Auxiliary. Special program of entertainment is given at the Christmas program and once a year the Auxiliary entertains the doctors with a dinner or supper.

The Pickens County Medical Auxiliary sponsored an address on Child's Welfare Work by Mrs. J. M. Holmes, Supt., General Hospital in Greenville, S. C. The public and all Clubs were invited to hear Mrs. Holmes, who spoke at the Easley High School Auditorium, May 16th. Immediately afterwards, Mrs. W. B. Furman entertained informally at her home on Main Street, members of the Pickens County Medical Auxiliary, the Pickens County Medical Society, the Pickens County Health Unit and the Pickens County Board of Health.

Mrs. W. B. Furman, Publicity Chairman  
for Medical Auxiliary.

#### ASSOCIATION NEWS ITEMS

The South Carolina Medical Association will meet in Greenville, April 21, 22, 23, 1936, under the Presidency of Dr. S. E. Harmon of Columbia. Dr. George W. Crile of Cleveland, Ohio, will deliver the oration in surgery. Dr. W. B. Porter of Richmond, Virginia, will deliver the oration in medicine.

The program committee consisting of Dr. George R. Wilkinson, Chairman, Greenville, Dr. R. M. Pollitzer, Dr. Jack Jervey, Dr. C. O. Bates, all of Greenville met recently with President Harmon and President Elect R. C. Bruce,

and discussed the preliminary arrangements and scope of the program for the next meeting. The program will be limited as usual to about fifteen papers and abstracts of these papers will be requested by the Committee.

It was decided to curtail the usual introductory exercises and start right in with the scientific program at 10 A. M. on Wednesday, April 22 and close the meeting promptly at noon on Thursday, April 23.

The House of Delegates will meet on Tuesday night, April 21. The entertainment features for the Association, will be decided upon later.



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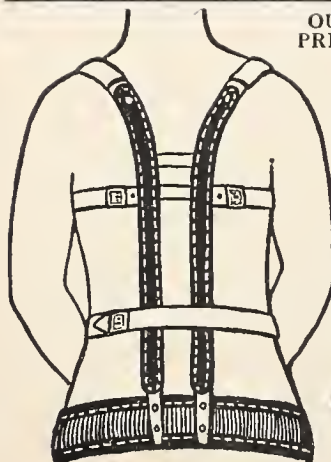
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### SURGICAL JUDGMENT IN OUR APPROACH TO THE ACUTE ABDOMEN

By

LeGRAND GUERRY, M.D.  
Columbia, S. C.

We are constantly drawing this distinction between an operator and a surgeon. Defining an operator as one who is concerned primarily with problems of methods and technic or as it were the ritual of surgery. Such a person is not greatly concerned with the broad fundamental principles of medicine that underlie the practice of good surgery.

On the other hand, we like to think of a surgeon as one who has been broadly educated, who possesses philosophical background, who is more concerned with principles than with the technic of method, who understands that the basis of good surgery is good medicine, who has mental capacity and grasp to deal with the spectral doubts that lie outside of the operating room, and who understands when and where to operate as well as how to operate.

This is just another way of saying that we intend to discuss for the few moments at our disposal the subtle problem of judgment; specifically surgical judgment. Just at this point it may be well to define judgment in the language of Webster: "The word judgment has its derivation from the Latin word *Judicare* and is defined as "The act of judging; the operation of the mind, involving comparison and discrimination, by which a knowledge of moral qualities, intellectual concepts, logical propositions, or material facts, is obtained. The power or faculty of performing such operations when unqualified, the faculty of judging or deciding rightly, justly, or wisely, good sense."

To my thinking it is impossible to discuss properly the approach to the acute abdomen without a consideration of surgical judgment since the two things are well-nigh synonymous terms. The reason for this is not far to seek. The mistakes of surgical judgment in handling the great crises of the acute abdomen can be quickly turned into fatalities. The fate of these cases depends, not primarily on a technic and method of operation, but are indissolubly connected with clear, precise, discriminating judgment.

The surgeon who properly correlates his facts, wisely interprets them, who uses the clearest judgment in the application of these facts to the individual case, will always have the best results. This is a principle that is germane to the whole range of human thought and action. It is true in business; it is true in law; it is true in general medicine; it is true in surgery.

This is the reason, certainly one of the reasons, why problems of judgment so vastly outweigh in importance methods of technical performance.

Sir Frederick Treves, one of the keenest and most philosophical minds in the field of surgery, has given us this aphorism:—"Shakiness of the hand may be some bar to the successful performance of an operation, but he of a shaky mind is hopeless."

To illustrate:—An ordinary supra-vaginal hysterectomy for an uncomplicated uterine fibroid tumor in an otherwise sound and healthy woman, does not call for the exercise of any special amount of judgment; it is a conventional operation, with ample time not only to prepare the patient, but to fix and determine the conditions under which the operation shall be done. It becomes at once obvious in such a case that method of operating and technic of perform-



ance, take the position of primary importance.

How vastly different is the problem however, in the case of a man with a bullet wound through his abdomen. When you see him for the first time he is in profound shock, feeble rapid pulse, cold clammy leaky skin, subnormal temperature, cyanosis, air hunger, and probably intra-peritoneal hemorrhage. The threshold of his vitality and resistance has been forced down to the lowest possible level, well-nigh anything done to him would be enough to push him over.

How are you going to handle such a case, Take him to the operating room and operate immediately? I think not. For this situation imposes on us not only difficulties of handicraftsmanship, but the far weightier problems of when to interfere. Surely the patient would be better off to take sufficient time to improve his general condition; namely: by getting him warm, by giving him sufficient morphine to relieve his pain, by raising his fluid level, by giving him time to react from the primary shock of the injury, by blood transfusion, etc.

One of the most serious problems in connection with the acute abdomen, particularly so and always present in the matter of penetrating wounds, is the question of hemorrhage. It is serious enough to be responsible for a large number of deaths from this source. Many of these patients die from hemorrhage long before the stage of peritonitis has been reached. Our position about the surgical handling of such cases may be stated as follows: We believe it to be a great mistake to take these patients with penetrating, perforating bullet wounds of the abdomen that come in in a condition of profound shock, with or without hemorrhage, rush them to the operating room and operate immediately. If you do so you are inviting disaster and an excessively high mortality. Specifically as regards the problem of hemorrhage we must remember that in the presence of traumatic shock it takes comparatively little loss of blood to produce a profound circulatory disturbance.

Often we have had this experience: In cases of perforating wounds of the abdomen with hemorrhage, we have operated and repaired ten or twelve perforations, practically emptied the abdomen of blood and completed the operation without finding the source of hemorrhage. An

irregular tear in a small vessel coupled with a profound drop in blood pressure, permits thrombosis of the vessels thereby controlling the hemorrhage before the operation is undertaken. This is one of the main reasons why we never operate with precipitate haste. On the other hand proponents of immediate interference will occasionally take part in the dramatic episode of saving a life by finding and controlling the bleeding from a larger vessel. In so doing however, they will sacrifice ten lives for the purpose of saving one. We believe this to be bad surgery.

Let me repeat as indicated above, much of the time through the operation of natural forces the bleeding will already have stopped.

And remember this; that even in the presence of perforated intestine, it takes time to develop a spreading peritonitis. There may be immediate local soiling but not a true peritonitis. This takes time to develop; several hours of time at that. In many cases you have ten or fifteen hours on which operation can be deferred with advantage.

Some years ago I published a paper on "Penetrating Gunshot Wounds of the Abdomen" in which there were reported 27 cases with a mortality of about 10 per cent. I am perfectly convinced that a number of these cases were saved by taking the necessary time to improve the patient's condition before operating.

Another illustration: A woman, age 37, with an infected gall-bladder with stones, operated on December 4, 1931. Operation was the conventional cholecystectomy which was readily accomplished without any undue difficulty. She left the operating table in excellent condition. There was no problem up to this point to tax one's judgment or surgical resource. What an amazing difference to find the patient on the same afternoon about 5 o'clock in articulo-mortis from an intra-abdominal hemorrhage. Surely, here we were in the presence of a real emergency. The customary thing to do under such circumstances would be to give the patient an anesthetic, reopen the abdomen, and stop the hemorrhage.

The patient was carried to the operating room in her bed. I was convinced that the ligature on the cystic artery had slipped and that this was

the source of the hemorrhage. However, she was so nearly dead that it seemed to me and to my associates, that any attempt to open her abdomen would be immediately fatal. She was given a blood transfusion of about 500 c. c. Her condition improved but very little. After waiting several hours expecting her death at any moment, we gave her another blood transfusion of 500 c. c. To this transfusion she made definite, though slight, improvement. Even up to this point her condition was so precarious that we were afraid to make any formal effort at stopping the hemorrhage. Early the next morning we could be reasonably certain, through observation of the gauze drainage and cutting of one suture next to the drain, that she had had no further bleeding.

To make a long story short, this patient was never reoperated on. At this time she is perfectly well, and we believe that her recovery was due to the fact that she was simply "waited out" and that no operative effort was made to control the bleeding from the cystic artery.

You can see the point that I am trying to make: The problem in the first instance was the simple problem of doing a conventional cholecystectomy. Faced in the second instance with immediate death from a surgical calamity, the great problem involved was one of discriminating surgical judgment, and on the correctness of this judgment hinged the matter of life and death.

This much we absolutely know: that the patient is today alive and well and no secondary operation was performed for the relief of her hemorrhage.

An old axiom of medicine and surgery is to give the patient every possible chance. It is a very easy thing in the presence of such an emergency as outlined above, to deprive the patient of their only chance.

The physician or surgeon who learns properly to evaluate the "*vis medicatrix naturae*" has attained the beginning of wisdom. There is scarcely any limit to her capacity to help.

We could continue indefinitely with similar illustrations to prove that in the handling of the acute abdomen this thing of discriminating judgment, wrought out of a background of clinical experience, is the great desideratum.

We have only time to hint at the difference of the problem involved in an unruptured appendix on the one hand and a perforated appendix with peritonitis on the other; or a simple cholecystitis as against a perforated gall-bladder with peritonitis; or a simple cyst of the thyroid as against an intensely toxic hyperplastic thyroid; or a simple duodenal ulcer as against a perforating duodenal ulcer. And so on we could furnish illustrative cases to the very end of the chapter.

After an experience of a bit better than thirty years, there is no problem in surgery about which I have altered my attitude more thoroughly than in the matter of the acute abdomen. This business of rushing into the acute abdomen with precipitate haste, simply because it is acute, is all wrong and carries with it its own label of incompetency. In many, many cases the urgent thing to do in the acute abdomen is to leave the patient to the unimpeded efforts of nature. The operator simply has before him the problem of operative interference, while the surgeon possessed of discriminating judgment will be, or should be, able to separate the cases that need prompt intervention from those whose chance for life would be conserved by reasonable delay.

The surgeon who puts aside sound judgment and precise anatomical knowledge for the age old axiom of "cut and tie," will surely "reap the reward of his labors."

May we now take a more intimate view of our subject.

## 1.

Don't be in too great haste to operate. Nearly always there is ample time, not only to be reasonably sure of your position, but to improve the patient's general condition. The surgeon should control the initiative and dictate the terms under which the battle is to be fought. The easiest way to make a fatal error in judgment is to be hurried.

## 2.

Don't delay operating unduly in the hope of making a complete diagnosis. Certainly this is true in the presence of the acute abdomen. A complete diagnosis much of the time is impossible. I do not worry too much now-a-days about the question of diagnosis in the presence of a surgical abdomen. What gives me endless



concern is this: Are the indications sufficiently clear for going in? There is ample time for complete diagnosis when the abdomen is opened. Understand me here; I am not belittling diagnosis for it is one of our sheet anchors. We must keep a clear perspective and properly evaluate the patient's condition.

## 3.

Don't, please don't, continue the vicious practice of using purgatives in the presence of acute lesions of the abdominal cavity. This is a trite statement, and very much has been written about it, however, patients continue to come in day in and day out in which this fundamental point has been disregarded.

Many of our ablest surgeons contend that there is no such thing as a diffuse peritonitis following a perforated appendix in which purgative medicines have not been used. This may not be literally true but there is a vast amount of truth in the statement. Purgation is the very badge of ignorance so far as the acute abdomen is concerned. Purgation in the presence of an acute intraperitoneal infection may readily be fatal.

## 4.

Don't give morphine until the diagnosis has been made or until you are reasonably certain that operation is to be done. It will surely mask the symptoms and lull you into a false sense of security. The truth of the matter is this: morphine puts two people to sleep; the patient on the one hand and the doctor on the other. Also remember that if it takes more than one half grain of morphine to relieve an attack of appendicitis it likely means that you are not dealing with appendicitis but probably with stones in the gall-bladder, kidney or ureter.

When once decision is made for operation, particularly in the presence of intraperitoneal suppuration, we must be thorough and radical in our handling of the pathological process. Adequate drainage is one of the essential elements of success. The very popular statement of "when in doubt don't drain" may be witty after a fashion, but it is altogether vicious as a surgical principle. I am afraid of pus in the abdomen. It matters not what its origin or what

the amount. If we handle intra-abdominal suppuration carelessly we will come to know the meaning of the appellation—"Trickster."

## 6.

Don't fail to grasp the difference between a contaminated wound and an infected wound. I mean precisely this: In the presence of intraperitoneal suppuration, notably in reference to appendiceal abscess where there is obliged to be gross soiling of the tissues, if the technic and intraperitoneal toilet has been correct, drainage complete and thorough, closure of the wound properly handled, one can be practically sure of primary union in 85 per cent to 90 per cent of the cases, and a suppurative appendix can be well-nigh turned into a clean case so far as morbidity and confinement to the hospital is concerned. Such a wound we think of as a contaminated wound. If on the other hand the same identical wound is sewed up tight, hermetically sealed as it were, the wound will break down in 90 per cent of the cases with extensive suppuration. In this instance the wound is viewed as an infected wound. It is of basic surgical importance to remember that the pus that does the damage is the pus under pressure.

## 7.

Don't fail to remember that nothing so mars the convalescence of a patient or compromises more directly the result of an operation than wound infection. A simple but rigid, aseptic technic, gentleness and respect for the tissues in the manner of handling them are matters of primary importance. The size, the extent, the location of the incision, the readiness with which the incision gives the surgeon access to and control of, the field of operation, constitutes the epitome of operative surgery.

Knowing what not to do is just as important as knowing what to do. This is especially true in the presence of the acute abdomen, for the surgeon is a good surgeon who knows when he is doing harm and will quit.

I close by reminding you that the father of medicine has bequeathed to us this sage axiom—"Life is short; art is long; experience fallacious; judgment difficult."

## SURGERY IN ROPER HOSPITAL

By

R. S. CATHCART AND J. I. WARING

Charleston, S. C.

When Thomas Roper of Charleston bequeathed to the Medical Society of South Carolina a sum for the establishment of a hospital, he laid the foundation for the development of a division of surgery which has been of inestimable service to the state, not only in its own technical accomplishments, but also in its position as a teaching unit which has given instruction to more than the majority of the surgeons of South Carolina.

Opened for the reception of patients in 1856, the hospital became active at a period in which surgery had yet to find its way to success. Anaesthesia had indeed been developed, and ether was administered in Charleston as early as 1847, but the field of antisepsis still awaited the coming of Pasteur and Lister. In the old records of the hospital there is no provision among the supplies for sterilizers or antiseptics. Pus was still laudable, and the boldest surgeon hung back from operations which today are ordinary procedures. Perhaps that fact explains the record of no surgical deaths in the hospital during its initial year of operation.

The first consulting surgeon of Roper Hospital was Eli Geddings, first physician to receive a degree at the Medical College of South Carolina, one time head of a private school of Anatomy and Surgery in Charleston, later Professor of Surgery in the Medical College of the State of South Carolina, Surgeon in the Confederate Army, publisher at one time of the Baltimore Medical and Surgical Journal, and national figure by reason of his surgical ability and achievements. Associated with him as attending surgeon was Dr. Robert A. Kinloch, later Professor of Surgery and Dean of the Medical College, one of the founders of the American Surgical Association, likewise head of a private course on surgery, inventor of several instruments, and surgeon for the Confederacy. To him is given the credit of being the first in America to resect the kneejoint (1856) and the first to treat fractures of the mandible by wiring. Above all his reputation rests on the laparotomy which he performed for

resection of the intestine in 1867, probably the first in this country.

As the records show, such men as these would naturally be concerned with making improvements in the amphitheater, the operating room, the operating table, and the lighting of the new Roper Hospital. Doubtless the hospital physicians, who were at that time undergraduate students, since graduates were not available, found themselves under most able masters.

At the beginning the hospital became a teaching institution. Student tickets for admission to the lectures were used. Beside the general surgical cases, venereal cases in women were admitted to a special ward and furnished valuable clinical material. In 1857 attendance at the Hospital Clinics for one term was made requisite for graduation from the Medical College.

Some years later Dr. Julian Chisolm, author of the "Manual of Military Surgery" so widely used by the Confederate surgeons, became consulting surgeon, and added his store of knowledge and experience to the source from which the student drew his surgical training. His appointment coincided with the diffusion of the knowledge of Lister's inestimably valuable work in antisepsis. Not until many years later was the development of steam sterilization and the development of the ritual of the operating room (1891) to open the enormous field which modern surgery covers so splendidly. Even up to this later time surgery remained to be demanded by necessity, rather than used for expediency, and the scope of its accomplishments was still rigorously limited. Now opportunity was ripe for the work of such able men as Manning Simons, who performed laparotomy (1892) and many other operations, and R. B. Rhett, who was an active, bold and capable surgeon, performing at one period 216 operations in 199 days in addition to carrying on a tremendous general practice. Such work played an important part in spreading the knowledge of the great possibilities of surgery to the students who walked the wards of the hospital and later were scattered over all parts of the state and country.

Surgical instruction of students in the hospital was later under the able direction of Dr. J. Somers Buist, Professor of the Principles and





Roper Hospital, Charleston, S. C. Teaching Unit of the Medical College of the State of South Carolina.

Practice of Surgery in the Medical School. After him came Dr. Charles M. Rees, who lectured and operated upon the ample clinical material furnished by the wards.

The present Roper Hospital building is the successor of other structures. The first building was in Queen Street and a portion of it is still in use as a residence. This building was operated until 1873, after being in the hands of the Federal authorities during the Civil War, and was then leased to the city for a period of fifteen years. The earthquake of 1886 practically destroyed it, whereupon the city built a hospital on the site of the building used at present. This, however, was never approved or accepted as Roper Hospital by the Medical Society.

After many difficulties, the nucleus of the present group of buildings was developed. By the vigorous efforts of an able committee consisting of Drs. R. S. Cathcart, T. G. Simons, Robert Wilson, Walter Porcher, and Edward F. Parker, the construction of the new hospital was accomplished. The heads of the surgical department in the new structure were as follows: C. P. Aimar, General Surgery; A. J. Buist, Gynecology; R. S. Cathcart, Abdominal Surgery; W. H. Johnson, Orthopedics; and Lane Mullally, Obstetrics. Surgical diagnosis was soon aided considerably by the development of a department of roentgenology under Dr. A. R. Taft, and facilities for operative work

were gradually improved by the purchase of adequate equipment. At the present time the hospital has four operating rooms, an emergency room, a surgical clinic, cystoscopic rooms, and ample accessories.

Roper Hospital has long been familiar to those readers of the Journal who are graduates of the Medical College of the State of South Carolina, and to those who have attended the many meetings, clinics, and conferences which have been held in its halls and operating rooms. The charity service provides a wide range of material for the continuation of the teaching which has always been a feature of Roper's activity. The possibilities for instruction are shown by the figures in the Annual Report of the Hospital for 1934. During that year there were 927 major operations, 4839 minor operations, 491 salvarsan administrations, 268 blood transfusions, 338 cystoscopies, 706 obstetrical deliveries, and 204 plaster applications.

The present active surgical staff is as follows: Surgeon in Chief, R. S. Cathcart.

Gynecologists, A. J. Buist, R. L. McCrady and F. G. Cain.

Obstetricians, L. A. Wilson, H. W. deSausure.

Urologists, J. J. Ravenel, P. W. Sanders, R. B. Gantt.

Surgeons, J. S. Rhame, T. E. Bowers, T. H. Martin, W. H. Prioleau, A. E. Baker

Orthopedist, F. A. Hoshall.

Ophthalmologists & Otologists, E. F. Parker, J. F. Townsend.

Rhinologist & Laryngologist, J. E. Smith.

Ophthalmologists & Otolaryngologists, P. G. Jenkins, R. B. Rhett, R. M. Hope.

Thomas Roper, philanthropist, gave his legacy generously and wisely for the establishment of an institution which has done much to spread the achievements of surgery to the whole of South Carolina and beyond its borders. Other benefactors have added very considerably to the funds available for the care of the poor of the city and county. Donations and bequests made both before and after the period during which the hospital was operated by the city authorities have made up a total amount which allows for maintenance and progress. The Medical Society of South Carolina has administered these funds wisely and well for the good of the unfortunate members of the community.

## HEAD INJURIES; THEIR MANAGEMENT AND TREATMENT

By

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The modern management of *head trauma* is based upon the fundamental knowledge of intracranial pressure and volume relationships. The beneficial methods at the disposal of the clinician are those which will control edema and prevent increase of intracranial pressure, (due to excessive fluid within the cranio-vertebral cavity) which heretofore have been the chief causes of disturbance to normal cerebral circulation and consequently the function of the brain and spinal cord.

In the last analysis, it becomes a question of our ability to adequately supply the brain with oxygen and nutrition, in spite of the many handicaps which may be presented through fractures of the skull, hemorrhage, or direct brain laceration. Intramedullary cerebral hem-

orrhage itself is rapidly and almost universally fatal when occurring in the region of the pons or in the substance of the brain near the thalamic structures. All methods now at our disposal fail to save a patient suffering from such a complication. It is therefore, evident that intelligent treatment must be based upon the care of those hemorrhages which are subarachnoid, subdural or epidural, and the hemorrhage, per se, (if the patient survives the third hour), must be considered in the light of its disturbance upon the remaining intact cerebral circulation.

The fracture of the skull is not a determining factor in these cases unless massive depression of the skull be such that it decreases the total volume of the cranio-vertebral cavity in such a way that the structures within are prevented from receiving their normal volume of blood.

It is evident that if the total volume of the cranio-vertebral cavity is decreased by reducing the space, there will not be sufficient room for the normal circulation of blood and the brain structures will suffer proportionately through compression and anemia. It is also evident that a subdural or epidural hematoma will decrease the volume of the cranio-vertebral cavity and of necessity some other component must be eliminated from the cavity to make way for this added and incompressible mass.

The relief obtained from the removal of an epidural or subdural clot is only of value in that it permits a return of blood volume, and, with it, a return of brain function through better oxygenation. The immediate elevation of a depressed fracture is likewise dependent upon the necessity for permitting more blood to enter the cranial cavity so that its beneficial effects in terms of oxygen, nutrition and repair can be carried to the cerebral cells suffering from the adjacent injury.

Surgical decompression occasioned by removing an area of bone and opening the dura permits the brain mass to herniate, (i.e. enlarges the cranio-vertebral cavity to permit the return of necessary blood supply), and with this decompression the patient is benefited to the degree that necessary circulation can be continued during the period when the brain is swollen and the cellular edema takes up the volume required by the vascular system to maintain proper blood

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Address delivered before the South Carolina Medical Association at Florence, S. C., April 24, 1935. (Invited guest).



supply for the preservation of life.

*Physiological decompression* through *dehydration* and *spinal drainage* is of value in that it reduces the volume of spinal fluid and, with the subtraction of this unimportant component, permits a greater volume of blood to temporarily circulate within the confines of the cranio-vertebral cavity, proving far more effective than any other form of decompression. Spinal drainage should be undertaken in all cases of cerebral trauma, so as to permit the greatest amount of relief of the brain from pressure, due to edema and increase in spinal fluid accumulation. Surgical measures of relief will only occasionally be necessary if this beneficial subtraction of unnecessary intracranial fluid be accomplished early, with consequent improvement in cerebral circulation.

The objective of treatment in cerebral trauma is (1) the preservation of the patient's life, and (2) the reestablishment of the individual as an economic asset to the community.

In the past, the struggle to maintain the existence of the patient has overshadowed the need of protection of his mental faculties necessary for his subsequent period of recovery and economic readjustment. We must coordinate and modify the methods of treatment so as to include in the means of relief these two important factors, and apply the methods for correction of increased intracranial pressure at the earliest possible moment.

The attending physician must carry clearly in mind the fact that death from head injury is not due to the "fracture of the skull" but is brought about by the changes in physiological relationships within the cranial cavity, due to increased hemorrhage or cerebral edema secondary to the trauma.

It has been clearly recognized in recent years that vast areas of the cerebrum may be destroyed or removed without sacrifice of the patient's life. The vital centers concerned with respiration, blood-pressure and cardiac activity lie at the base of the brain in the region of the third ventricle, pons and medulla. These structures are rarely directly injured excepting by bullet wounds or sharp objects which pierce through the deep portions of the skull and tissues at the base.

The disturbance of circulation, due to hemorrhage, edema, or contrecoup injury to the pons or region of the third ventricle comprises the most dangerous complication that may follow cerebral injury and presents the most difficult group of cases with which we have to deal. On the other hand, many patients with extensive cerebral laceration, subarachnoid hemorrhage and direct cortical damage to the cerebrum survive and frequently make excellent readjustments.

Our problem, therefore, involves the appropriate management of cerebrospinal fluid, cerebral edema, and consequent intracranial pressure, as well as treatment directed toward the hemorrhage, by either direct or indirect methods.

#### DIRECT METHOD. SURGICAL DECOMPRESSION.

In our belief, the only two indications for operation are:

(a). Compounded or comminuted fracture of the skull, with extension into the cerebral substance.

(b). Depressed fractures, sufficiently large to cause pressure and encroachment upon important cerebral areas.

Slight depressions, gutter fractures and collar-button depressions are not considered emergency procedures and can better be left for correction until after the tenth day, when the signs of intracranial pressure and cerebral edema have entirely subsided.

Uncomplicated, focal, epidural, or subdural hemorrhage may of course be considered as an emergency procedure at times, but here, "decompression" is not the objective, but *exploration* based upon careful neurological examination to determine the site of the lesion and its proper approach.

When combined focal signs of subdural or epidural hemorrhage are associated with bloody spinal fluid and cerebral contusion, in our experience, it has been better to delay "exploration" until after intracranial pressure and cerebral edema have been adequately controlled. The removal of the clot can be undertaken at any time that the patient's symptoms indicate the necessity of the measure for relief of edema and intracranial pressure.

It is often better to attack such focal hem-

orrhages after the fifth day, if possible, as the operator will not be confronted with the horrifying experience of opening the dura to release a subdural hemorrhage, only to have the intensely swollen brain expand so rapidly through the dural exposure that it may rupture itself and extrude masses of brain tissue above the level of the wound, making the proper closure impossible and leaving a permanent cerebral hernia. Such added trauma and destruction of the brain are far too common in the experience of the older general surgeons who attacked these problems without a full control of the intracranial pressure and cerebral edema. The danger of infection, as well as the need for destruction of the resulting fungating cerebral mass only adds insult to injury. It has been our policy to bend every effort toward the control of cerebral edema and intracranial pressure, before attempting such an exploration.

In 556 cases of cerebral trauma in the author's series, emergency decompression was undertaken as a measure of last resort in fifteen instances. Even though every other measure of treatment had failed, one is shocked to find that twelve out of these fifteen cases died because of, or in spite of, operative intervention.

With the neurosurgical clinic equipped to care for such complications, and with instruments constructed especially to deal with intracranial pressure problems, such a mortality only too clearly indicates that the patients have *not* been benefited by early operative exploration, and with the exception of three cases such early operative intervention has been unsuccessful. On the other hand, delay of any operative procedure to the tenth day, such as exploration for focal hemorrhage, or elevation of a localized depressed fracture has not been associated with a mortality.

In our experience, we can definitely say that surgical intervention has no justification in cerebral trauma, excepting as indicated above. When all other measures toward control of cerebral edema and pressure have failed, then it will be found that *operation also fails* to preserve these cases even though removal of a complicating clot permitted temporarily better volume within the cranial cavity.

#### INDIRECT METHOD. (NON-SURGICAL).

The use of "dehydration" in the form of spinal drainage and strict limitation of liquid intake in the treatment of the patient has been responsible for lowering the mortality of cerebral trauma approximately 10 per cent below any figures formerly recorded throughout the country (Mock, Int. Digest. June, 1934).

The routine of treatment and the method of dehydration originally evolved by the author fifteen years ago follows:

I. Period of shock. The evidence of shock has been estimated by us from the following clinical determinations:

- (a) subnormal temperature.
- (b) Cold, clammy extremities.
- (c) Low diastolic pressure, especially below 60.
- (d) Pulse usually above 120.
- (e) Increase in the respiratory rate.
- (f) At times a rising pulse pressure.

II. Period of emergency treatment.

(a) Warm, dry, clothing. Heat applied to the body surfaces. Shock-cabinet, if available.

(b) Atropin sulphate, grain 1/100 (adult dose). Pituitrin (surgical) 15 min. by hypodermic. Strychnin, grains 1/30th by hypodermic.

(c) Ergot and ephedrin if necessary.

The purpose of the above is to prevent further loss of fluid from the skin surfaces, and hence conservation of fluid needed to maintain blood volume. The stimulants are directed toward vaso-constriction of the peripheral circulatory bed, thus improving diastolic pressure, favoring better oxygenation and correcting the vasomotor dilatation associated with shock. Note that cardiac stimulants are not needed, as the heart is active enough. Caffein sodium benzoate, and adrenalin are temporary violent stimulants which should be used only as measures of last resort, or to temporarily tide over a failing circulation.

III. Immediate intravenous administration of sterile, 50 per cent glucose solution. The average dose for an adult ranges between 40 and 50 c.c. and depends upon whether the patient is fat, boggy or alcoholic. Larger doses are used in this type of individual than would



be used for thin, emaciated or dehydrated types.

The purpose of 50 per cent glucose solution, intravenously, is to draw from the tissues the fluid needed for blood volume, and thus replace from the patient's own tissues the needed amount, without the necessity of giving normal saline solution by vein which has been practiced so frequently in the past. Not only does the hypertonic glucose solution assist in reclaiming fluids from the tissues, to replenish the blood volume, and thus improve blood-pressure and consequently circulation, but it also prevents the further escape of fluid into the tissues which is especially important to the cerebral mass and the cerebrospinal fluid spaces where oncoming intracranial pressure will undoubtedly ensue within the next few hours, if the trauma has been severe.

Occasionally it has been necessary to add 50 to 150 c.c. of saline solution along with the glucose, when shock is severe, and it is evident that insufficient tissue fluid may be reclaimed by the glucose to overcome the loss of blood volume. As blood volume loss is not only due to direct hemorrhage, but to temporary loss of the plasma fluids into the tissue spaces, and out over the skin surfaces, it is most important to reestablish this factor, as soon as possible. In our experiences, many times, glucose alone has been adequate and may be repeated in four hours, should the necessity arise.

We have entirely abandoned the giving of large quantities of saline solution, intravenously, because although this promptly corrects the state of shock, it nevertheless precipitates cerebral edema and intracranial pressure, the patients surviving the shock just sufficiently to succumb to respiratory failure from cerebral edema. It is far better to repeat small amounts of saline in doses of from 50 to 100 c.c. where shock persists, than to give an initial large quantity of fluid by vein which would require active measures toward its withdrawal within the next four to eight hours.

A minimum amount of fluid by mouth should be given during the period of shock to combat the oncoming symptoms of cerebral edema, and it has been our custom to consider the period of shock over when *temperature returns to normal or above* and when the pulse diminishes

to the neighborhood of 120. If the pulse has been below 120, the index as to the period of shock is determined by the temperature.

2. Control of bleeding points to the scalp, and inspection by probe or gloved finger, to determine the presence of fracture, depression, or compounded comminution should be considered next, followed by cleansing of the wound with antiseptics and simple dressings to meet the immediate requirements. No attempt is made to suture the wound and no immediate operative measures undertaken until the period of shock has entirely disappeared. Immediate x-ray is not to be considered, unless a compounded fracture is evident by initial inspection, or depression, sufficient to be recognized easily and of severe enough proportions to warrant operation.

*Every effort should be directed toward the immediate treatment of shock, and the subsequent intracranial pressure which will ensue.*

No examinations or clinical procedures have been permitted, other than the above during the period of shock, and no time is lost in instituting active measures to prevent secondary cerebral edema and intracranial pressure.

3. During this interval, temperature, pulse, respirations, and blood-pressure should be taken every fifteen minutes. If bleeding from the ear or cerebrospinal leak is present, the ear is carefully cleansed and tampons soaked in dichloramin-T or 2 per cent mercurochrome inserted in the external auditory canal. If bleeding from the nose is persistent, and requires attention, a finger-cot packed with gauze strips and moistened with mineral oil is introduced into the nasal cavity on the side of the bleeding.

During the period of reaction to shock, the necessary stimulants are repeated or amplified, as the indications may require.

Preparation and orders are given to prepare for the next steps required in the treatment.

4. Spinal puncture is performed as soon as the period of shock has passed. An opportunity to examine the patient neurologically is also afforded after the shock has been controlled. Only where respiratory signs indicate a cerebral compression has a lumbar puncture been permitted as an immediate measure.

Spinal puncture requires a careful pressure

reading by manometer; an 18 gauge, round-point, nickeloid steel, Babcock style of needle is preferred.

The subsequent program of treatment depends upon the character and pressure of the spinal fluid. If the fluid is clear, measures directed toward the subsequent control of intracranial pressure are indicated, with careful and frequent observations of the patient's neurological signs, to determine the possible presence of subdural or epidural hemorrhage. It is in this type of patient, without bloody spinal fluid, that subdural and epidural hemorrhage most frequently occurs. As the subdural and epidural spaces do not communicate with the subarachnoid space, a large hemorrhage of this character may occur without evidence of blood in the spinal fluid, but the clinician should not be misled when clear spinal fluid is obtained by feeling that intracranial hemorrhage has not occurred. In fact, when the spinal fluid is found to be clear, with a pressure of 14 mm Hg. or over, the clinician should seriously suspect the possibility of an expanding lesion, and watch carefully for signs indicated below which establish the presence of subdural or epidural hemorrhage.

If spinal fluid is found to be bloody, the pressure is taken by manometer and all of the fluid which can be obtained (with the patient in the recumbent position) is drained from the spinal canal for the purpose of not only reducing intracranial pressure and preventing immediate subsequent pressure, but also with the hope of removing as much blood as possible. Should the patient show bloody spinal fluid, this in our opinion is the strongest evidence to indicate that subsequent operative exploration is not warranted, or will be of little avail, although occasionally combined subarachnoid and subdural hemorrhage occurs.

The clinician must realize that blood in the spinal fluid indicates a laceration of the brain, or rupture of a surface vessel, and that these two important considerations will need careful treatment during the ensuing days in the hospital.

(a) Blood in the spinal fluid produces obstruction to the outlets of cerebrospinal fluid, and thus for a period of ten days at least, spinal

fluid must be withdrawn from time to time to prevent over-accumulation.

(b) When blood is present in the spinal fluid, laceration of the brain, as well as the presence of blood itself, tends toward producing irritation, edema, and swelling, and the necessity for dehydration throughout the ensuing days is imperative, so as to permit adequate circulation of arterial blood, within the cranial cavity, and preserve function of the important cerebral centers that otherwise would suffer for the lack of oxygen, in the presence of edema and pressure.

With the above considerations, sufficient information is now at hand to determine the subsequent treatment. The patient is at once removed to the proper hospital service, and the routine orders and procedures initiated.

There is no group of cases which require more prompt and thorough consideration. The careful and adequate management of the details concerning the immediate control of shock and intracranial pressure have rewarded us by a diminution in mortality of 11 per cent as compared with a former series four years ago.

Too frequently long delays occur in the attempted suturing of the scalp in the receiving ward; in the futile attempt to obtain x-ray examinations at a time when they are not indicated and are unnecessary, and in the delay associated with assembling the necessary requirements for lumbar puncture and other examinations, when a clear-cut program of treatment has not been visualized.

A special table is set up at all times in the receiving ward, containing the necessary stimulants; glucose and syringes as well as a lumbar puncture tray for emergencies of this character. Thus the initial program instituted in the receiving ward, which is imperative in these cases, depends upon the immediate appearance of the house physician, and the patient is well on his way toward adequate treatment by the time he is admitted and transferred to the hospital service.

The receiving ward intern is responsible for these early procedures, and is responsible for the delivery of the patient into the hands of the house physician, so that no time may be lost in



undertaking the second step in the treatment of these cases.

III. Considerations during the first twenty-four hours after admission.

With the period of shock over, attention must be directed toward maintaining blood-pressure and the control of intracranial pressure, as well as the subsequent dressings, or surgical debridement and reconstruction of the areas of laceration.

The importance of preventing restlessness and insuring quiet cannot be over-emphasized so as to prevent further cerebral bleeding and intracranial pressure, from violent efforts made on the part of the patient. Immediate attention should be given to the sedatives to be administered. Morphine should be avoided unless other measures fail, as morphine and its derivatives depress the respiratory center and frequently unnecessarily complicate this phase of the picture. Sodium Luminal, 2 grains (by hypodermic) is given at once, and chloral hydrate, 15 grains, with sodium bromide, 30 grains (adult dose) is given by mouth and repeated, fourth hour if necessary. When the patient is restless though unconscious, double the above dose of the chloral and bromide may be given by rectum in 4 ounces of hot tap-water.

The proper routine orders are then initiated.

1. Elevation of the foot of the bed.
2. Temperature, pulse, and respirations recorded every fifteen minutes.
3. Blood-pressure records every half hour.
4. Pulse pressure (the difference between systolic and diastolic blood-pressure) is charted separately with the pulse, every half-hour.
5. An ice-bag to the head.
6. Complete blood count.
7. Typing of the patient's blood.
8. Urinalysis, if specimen obtainable.

The diet should be a solid one, and if the patient is unable to take this type of food during the first twelve hours, no other substitute has been offered.

Fluid intake and output are carefully measured and charted, and the total fluids are allowed as follows:

(a) If spinal fluid is clear, subsequent spinal drainage is unnecessary. Total fluids are there-

fore restricted to 20 ounces per twenty-four hours (by mouth or rectum).

(b) If spinal fluid is bloody and repeated spinal drainage is to be undertaken, the total fluids are limited to 30 ounces in twenty-four hours.

It has been found in this series that if the patient's fluids are limited to 20 ounces, including water, soup, milk, tea, coffee, fruit juice, etc. subsequent spinal drainages have revealed that practically no spinal fluid can be obtained after the second day. The intracranial pressure will be thus controlled for the ensuing period and the cerebrospinal fluid system placed at rest, giving the maximum amount of cranial volume to the needed arterial circulation, which is concerned with oxygenation of the brain and repair of the injuries.

It is evident that if repeated spinal drainages are to be performed, with the object of draining the bloody fluid, and assisting in its elimination, sufficient spinal fluid must be obtained at each drainage. In this series an average from 45 to 65 c.c. of spinal fluid has been obtained by lumbar puncture every 24 hours, when the total fluid intake was placed at 30 ounces.

Should the patient be unable to take the solid diet after the first twenty-four hours, a soft or liquid diet may be given, but this form of nourishment must be included in the total liquids allotted for a twenty-four hour period.

Thirst is an early complaint, but can be adequately controlled by warm antiseptic gargles; moistening the lips with mineral oil, or vaseline, and giving small amounts of fluid at regular intervals.

In our experience, solid diet is retained by the patient without difficulty, whereas, soft or liquid diets were frequently vomited and only enhanced intracranial pressure due to their high water content. Great care must be exercised that the patient does not receive water or liquid from sympathetic patients or does not reach a source of supply, as several cases in this series clearly indicated, even up to the seventh day, that fluid intake, when suddenly increased, re-precipitated the stage of stupor and cerebral edema, as well as respiratory depression.

Medication covering the first twenty-four

hours is that concerned with the proper amount of sedatives. The repeating of pituitrin, 15 min. fourth hour, and the use of digalen, if the pulse is over 120, alternating with the pituitrin at the fourth hour, if indicated. Urotropin, 20 grains, three times a day, if the injury is complicated by a cerebrospinal fluid leak through the ear or nose, should be administered. This measure has been employed in the hope of preventing a meningitis, but there is no evidence that it actually does so.

With the blood-pressure records every half hour and the pulse pressure relationship with the pulse rate determined, as well as exact knowledge as to intake and output, the clinician is in a position to rationally control the patient's intracranial pressure.

Should the pulse persist over 120, either 50 c.c. of 50 per cent glucose may be repeated in four hours, or a small amount of saline given intravenously. This need not be deducted from the total fluid allotted by mouth or rectum. If the pulse pressure shows a tendency to rise or approach the pulse rate, the indications for further relief of intracranial pressure are thus established, and another spinal puncture and drainage are necessary, or a magnesium sulphate enema may be given to further enhance the dehydration. The proportions used at the present time are as follows: Magnesium sulphate crystals, 3 ounces; glycerin, 1 ounce; water, 6 fluid ounces. As this hypertonic enema draws fluid rapidly from the lower bowel, even though quickly expelled, the concentration is sufficient to give rise to some dehydration and can be repeated if ineffectual. Should the patient be conscious enough to swallow, 1 1-2 ounces of magnesium sulphate crystals in 6 ounces of water are given by mouth. This hypertonic fluid volume is not included in the 20 or 30 total ounces of fluid allotted to the patient because it is not absorbed.

Still more effective dehydration can be accomplished by the introduction of 50 per cent glucose, intravenously, followed in one hour by magnesium sulphate by mouth or rectum. The glucose tends to draw fluid from the tissue spaces and subarachnoid system, in the direction of the blood stream. This fluid will again re-enter the tissues in three to four hours, if not

removed from the body, and thus the subsequent administration of magnesium sulphate will recapture this fluid and eliminate it entirely, should the need arise. Glucose if given alone is only a temporary measure favoring the shift of fluid into the blood stream. Magnesium sulphate given alone tends to deplete the blood volume and requires that the blood reclaim its own fluid from the tissues, which is a comparatively slow process. The combination of the two brings about a prompt dehydration when associated with limitation of fluid by mouth or other avenues of introduction.

One contra-indication to the use of magnesium sulphate is apparent. If blood volume is already depleted through shock, hemorrhage, or dehydration, it is not wise to further deplete this necessary circulatory system by the use of magnesium sulphate. It is better to build blood volume again by the introduction of small amounts of normal saline solution by vein, and resort to direct lumbar puncture for the control of the over-accumulation of fluid in the subarachnoid space. Certain thin, emaciated, or dehydrated patients in profound shock require this modification. *It has been a general rule never to administer magnesium sulphate during the period of shock.*

It is evident that the first twenty-four hours following the injury must be devoted to balancing the fluids of the body; controlling intracranial pressure and maintaining adequate blood circulation. The judicious use of 50 per cent glucose solution, will maintain blood volume as desired. If the pulse remains over 120, digalen is given in 20 to 30 min. doses every fourth hour until the pulse reaches 120.

The most important consideration toward which all treatment is indicated is the maintenance of an adequate oxygen supply to the centers of the brain concerned with life, as well as the temporarily disrupted cortical mechanism, so that when the period of stupor and immediate injury is over, there will be a reestablishment of cortical function rather than the massive loss of highly-specialized cells sacrificed during the period of anoxemia and pressure, and subsequently producing the final posttraumatic signs of mental deterioration, loss of initiative, attention, and general mental acuity.



In order that oxygen be properly delivered to the tissue cells throughout the body, it is necessary to maintain diastolic pressure at 60 mm Hg. in the brachials, at all times. This can be accomplished by the proper administration of pituitrin, ephedrin and ergot. The need is to constrict the peripheral vascular bed, and seldom is it necessary to stimulate the heart itself. Thus, caffeine sodium benzoate and adrenalin are only used as measures of last resort or to temporarily tide over a failing circulation until readjustment is possible.

#### IV. Considerations of the following ten-day period of recovery.

During the following ten days of hospitalization, with the period of shock and immediate pressure controlled, x-ray studies of the skull may be made for a permanent record. Spinal drainage should be continued daily, or oftener, if blood is present in the spinal fluid; 10 c.c. of the spinal fluid withdrawn should be kept in a tube-rack for sedimentation and comparison with each daily specimen made. A specimen should be sent to the laboratory for cell count, daily. Spinal pressure should be measured at each puncture by means of a mercury manometer, and the entire amount of cerebrospinal fluid which will drain from the patient (in the horizontal position) should be removed.

Careful neurological studies should be made to determine the condition of the reflexes, the signs of focal hemorrhage, cerebritis, or trauma, and special reference be made to the size of the pupil. Dilatation of the pupil usually indicates the side on which the extravasation of blood is the greater. The deep tendon reflexes are usually lost during the early period following trauma, but promptly reappear, and should be noted from day to day. Hoffmann, Babinski and Oppenheim reflexes are of great importance.

The differentiation between stupor and aphasia is a point that must be clearly established early in the examination. Supra-orbital pressure will produce a drawing up of the face on the side of the pressure. If the stupor is profound, no reaction is obtained. In patients who are aphasic and semi-stuporous, the examiner may determine by this reaction, whether or not there is weakness in the motor supply to

the lower third of the face, when the patient is not able to respond or cooperate. This sign is of extreme importance in localizing a lesion on the opposite side, near the surface of the brain.

If the patient is aphasic, even though paralysis of half of the body is present (usually the right), the patient will make a definite effort to remove the stimulus with the unaffected hand, and give evidence of knowing where the pain is being produced, and how it should be removed. If the patient is stuporous, however, purposeless efforts and struggling are present in an effort to get away from the painful stimulus, but no coordinative movements are made to remove the external pressure or to locate the source of pain production.

Patients have frequently been thought to be unconscious when they could neither understand nor reply, and this sign of aphasia is one of great localizing importance, as it indicates a lesion in the sylvian area on the left side, in a right-handed individual.

Should focal signs be present and the patient's general condition satisfactory, immediate exploration is delayed until the intracranial pressure phase has passed and the period of subarachnoid hemorrhage is over. Focal lesions can be adequately dealt with on the fifth, tenth, or fourteenth day, so long as the patient's general condition remains satisfactory. Operative exploration, when indicated, is best accomplished after the seventh or tenth day, should other signs and symptoms remain satisfactory.

Frequently, focal traumatic cerebritis stimulates subdural hemorrhage in such a way that it is difficult to determine whether or not a clot is present. It has been our policy to await the fourteenth to the twenty-first day for signs of clearing of the paralysis, where intracranial pressure is controlled, and the patient's condition is satisfactory. Frequently the operator will expose an area apparently focal enough to suspect a hemorrhage, only to find no signs of a gross clot, but an intensely red currant-jelly appearance of the cortex, with congestion and edema. Such an exploration may be avoided, if careful study of the neurological signs, from day to day, indicates improvement in the symptoms and focal signs.

The patients are maintained on the fluid level allotted to them until the seventh to the tenth day, when, if the spinal fluid is clear, the intake is gradually raised and the patient is finally placed on 32 ounces of total fluid per twenty-four hours as the maximum. When spinal fluid is bloody, the level of 30 ounces is maintained during the period of drainage. This usually lasts up to the seventh or tenth day, depending upon the rapidity of clearing of blood from the spinal fluid, and the appearance of xanthochromia. When spinal drainage is discontinued, it is extremely important to reduce the fluid intake to 20 ounces during the ensuing two or three days, and thus obviate the necessity of repeating the spinal drainage for relief of pressure, which usually occurs after regular spinal drainage has been discontinued. The patient's fluid level is then raised gradually to 32 total ounces per day. He is recommended for discharge upon this level.

#### V. Posttraumatic Considerations.

The patient is discharged from the hospital with the caution that he must not exceed 32 ounces of total fluid per twenty-four hours during the ensuing three months, and should thirst or hot weather require more, this amount should not be exceeded by more than four to six ounces. He is placed on a "dry" diet, and advised to avoid sweets and salty foods. The latter not only helps to control the thirst, caused by the restricted fluid level, but prevents water-storage in the tissues and maintains a better water balance, without periods of over-loading.

The diet recommendations (see chart) have been established,

#### DIET INSTRUCTIONS

Total allotment of fluid per 24 hours, 32 oz. (Tea, coffee, milk, water, soup, fruit juices, etc.).

Total allotment of sugar per 24 hours, 3 teaspoonfuls.

Diet should consist of red and white meats, eggs, fresh-water fish, dry cereals and the vegetables listed below in any variety, as well as butter, cheese, nuts, etc.

Portions of food should be moderate.

Meals of equal importance.

Avoid over-eating at any time.

Avoid eating between meals.

One uncooked vegetable (carrot, lettuce, celery) and one fresh fruit (apple, orange, half of grapefruit, pear, few grapes, etc.) allowed daily. Where juicy fruits or vegetables, high in water content are

desired, exchange for appropriate amount of fluid can be made by *cutting* total liquid intake allotted, for the necessary amount substituted by the fruit or vegetable.

#### *Vegetables recommended*

Potatoes (baked, fried, French); Peas, Beans, navy and lima, (Drained of juice and served dry as possible); Carrots, Beets, Parsnips; Rice (dry steamed); Corn.

#### *Vegetables to be avoided*

Asparagus, Tomatoes, String beans, Squash, Turnips, Cabbage, Cauliflower, Onions, Spinach, All greens, Sweet potatoes.

#### *For Thirst.*

Warm gargle. For water may be substituted orange juice, grapefruit juice, White Rock, buttermilk, tea, coffee, milk, clear unseasoned soup. *Avoid soggy dishes.*

Stews, puddings, macaroni, gravy, apple-sauce. No creamed preparations.

#### *Avoid fruits such as:*

Melons, Peaches, Plums, Strawberries, Cherries.

#### *Restrictions:*

No salt added to food. No salty foods such as fish, chipped beef, saltines, pretzels, olives, salted nuts, etc. No sweets. No ice-cream, syrup, honey, jelly, cake, candy, canned fruits with syrup sauce. No sweet puddings, desserts or pie.

#### *Desserts (choice of one):*

Unfrosted cake (moderate portion). 1 cup custard. 1 junket. Cookies (without icing or sugar). Jello. No sweet puddings, icings, pie, etc.

#### *Allotment of liquids.*

Breakfast .....	6 ozs.
Breakfast to lunch .....	4 ozs.
Lunch .....	6 ozs.
Between lunch and dinner .....	5 ozs.
Dinner .....	6 ozs.
After dinner .....	5 ozs.

#### *Suggested Diet Proportions.*

Breakfast: Dry cereal (shredded wheat, corn-flakes, puffed rice or wheat, etc.) with *measured* amount of milk or cream. Buttered toast, egg, measured amount of coffee.

Lunch: 1 potato, one other vegetable such as listed above. Red meat, fowl, cheese or fish (unsalted). Bread and butter, custard or junket.

Dinner: 2 vegetables from above, meat or eggs. Measured allotment of tea or coffee, milk or unseasoned soup. Fresh apple, salad or celery. No desserts. Fluids as above.

with the idea of reducing excessive volumes of fluid from this source. Fluid is prescribed at definite intervals throughout the day, and the patient is required to keep an intake and output record, or to report back for follow-up and further advice.

It has been a striking fact, in this series, to note that the former posttraumatic headache,



dullness, loss of attention and disturbance in concentration have been an unusual rather than a usual finding, and this we ascribe to the control of the fluid balance.

On many occasions, patients have themselves reported that when they disregarded the fluid allotment or diet program, they felt dull, had headache, and had themselves returned to their former balance, because, "they did not feel so well when they took more fluid." Alcohol likewise has been forbidden and those who have undertaken indulgence in it have complained of the same return of headache, inattention, dullness, and general loss of concentration.

The rapid return to activity within three months has been a most striking feature in this series; whereas, formerly, six to nine months were required to readjust a patient to his economic surroundings, and frequently posttraumatic neurosis produced partial or permanent disability.

Because of this observation regarding the water balance, and the apparent symptom-complex associated with posttraumatic neurosis, many cases of posttraumatic neurosis have been placed upon this fluid balance, with distinct improvement of their mental acuity and subsequent symptoms. However, the chief value of the method has been in protecting the cerebral centers from pressure during the acute phase of the injury, and in maintaining an adequate and proper balance of pressure following the traumatic episode. In this way the deficiency in the absorption of cerebrospinal fluid has been met and a level of compensation reached.

The posttraumatic signs of headache, dullness, mental depression, impairment of memory, concentration, and loss of initiative are those of general increased intracranial pressure, and when treated as such respond to the general measures surrounding the question of cerebrospinal fluid production and over-accumulation.

As pointed out in other articles, it is our belief that the widespread brain atrophy, localized in the frontoparietal areas, frequently encountered in the post-traumatic is due to the intense edema and hydrostatic pressure affecting these areas. When pressure by an hydraulic cast is present in the areas of gross cerebrospinal fluid collections, intense supracortical

pressure is maintained during the early stages. The prolonged chronic pressure secondary to hemorrhage and adhesions in the subarachnoid spaces produces the atrophy so clearly found in the encephalogram. This atrophy so frequently noted in mental deterioration is in reality not a direct response to the trauma, but an indirect factor associated with the dynamics of the hydrostatic mechanism and the ultimate ischemia.

#### SUMMARY

That a proper water balance with dehydration is capable of reducing intracranial pressure, has been well established. In our experience, *dehydration* constitutes a more adequate control of fluid intake, and a balance of body fluids within the range of proper compensation, by avoiding excesses and limiting fluid accumulations, where possible.

That the measures directed toward this means of relief have been enhanced by the administration of 50 per cent glucose solution, and the proper administration of fluids, determines the success or failure of the control of intracranial pressure and frequently even these means fail, or are inadequate, so that spinal drainage must be resorted to.

In this series, it has been found unwise to resort to surgical decompression for relief of pressure, and the majority of cases operated on for the removal of a subdural or epidural hemorrhage, in the presence of bloody spinal fluid and as a measure of last resort have died because of, or in spite of, the operative intervention.

It is evident that they have been the hopeless group from the start, offering an 80 per cent mortality, taken as an operative series, although only 4 per cent in the entire series. These findings indicate the need for conservatism as to immediate surgical intervention, in the presence of severe cerebral injuries, especially when bloody spinal fluid is present.

It is our firm conviction that where operative indications are present, they are confined to the removal of a focal clot, at an opportune time, and to the repair, reconstruction or debridement of the depressed or compounded fractures of the skull, and that the results obtained from the physiologic dehydration, with

reduction of intracranial pressure, are far superior to the operative means of decompression, and that further damage to the brain is thus avoided.

The use of this method, in the acute post-traumatic cases, has been of great value in preserving the brain structures during periods of acute pressure, and in preventing the chronic intracranial pressure phases following cerebral trauma.

It has been the means of reducing the mortality in this series to a total of 18.33 per cent, and in the uncomplicated cases to an actual 9.0 per cent mortality, for those cases where a pure cerebral death from direct trauma was encountered.

Encephalography has demonstrated that the cortical changes noted in the past, in traumatic groups, occur rapidly following the initial injury. In fact, there is evidence that marked loss of cortical substance in the fronto-parietal areas can be demonstrated within three weeks to two months following this severe brain injury. The clinician must adequately protect the individual against not only the acute phase of intracranial pressure during the immediate period following the injury, but must maintain a proper adjustment of the cerebrospinal fluid circulation for months or years following the traumatic disturbance. In those cases where adequate control has been maintained, post-traumatic sequelae have been practically absent from the subsequent history and there have been only six cases in this series which showed permanent total disabilities.

The problem presented, therefore, is one of immediate control of the volume relationships within the closed cranial spacial walls, so as to permit adequate blood supply, in order to protect the nervous structure and to remove or diminish the cerebrospinal fluid volume or prevent intrinsic edema where possible. Any method which will permit better cerebral circulation or enlarge the cranial cavity by decompression offers the best method now at our disposal for dealing with traumatic injuries of the brain which primarily disturb the *volume relationships* between the circulating blood and cerebrospinal fluid, and secondarily involve the

cerebral structures in anemic or degenerative processes.

Subdural and epidural hemorrhages, direct lacerations, and focal depressions must be dealt with as local problems, rather than as a general consideration of cerebral trauma. The patient does not die of a "fracture of the skull" but may die from diffuse edema, hemorrhage, and ultimate cerebral anoxemia.

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### SOME INTERESTING CASE REPORTS\*

By

G. P. NEEL, M.D.  
Greenwood, S. C.

#### CASE 1

In this case I was compelled to rely upon the father for the clinical history. Excellent amanuenses are seldom had even under favorable auspices and usually worthless when obtained from a third party. In this case, however, the history is of real value. William Deal age (111) one hundred and eleven hours. The boy had nursed but not vigorous. Had fretted from birth. Had diarrhea rather than constipation. Protested as well as he could any attempt to move or handle him.

The first thing to attract the parents attention was a greatly distended abdomen on the morning of the day I saw him. Their physician was called at once who referred the boy to me.

I noticed a bit of humanity lying in the arms of his father, in appearance more simian than human, more dead than alive. He was quite fretful and resented interference. The abdomen apparently was as much distended and as tense as it was possible. The distension was evenly distributed over the abdomen. The mass seemed to have been lying upon the intestines, not among or under them.

A tentative diagnosis of appendiceal abscess was made and immediate drainage was advised under ether. The abscess was opened over Munro's point, and a pint of pus, fibrin, meconium and peritoneal fluid (estimated) evacuated. No estimate was made of amount of gasses, drainage was established and wound closed.

The next morning the wound was dressed

\*Note: These cases are submitted for their novelty, rather than scientific interest.—G.P.N.



to remove all tubes. Nature had relieved us of this duty. Adhesive plaster one inch wide was placed three times around the abdomen over center of the wound which now lay wide open.

Six years after the operation William was the largest boy I have ever seen for his years and had an excellent abdomen. No evidence of hernia.

Some points of interest. The age of the child. A large firm and well walled off appendiceal abscess. My assistant insisted on a thorough and complete examination to determine the condition confronting us. Where and how did the child acquire the organisms causing the appendicitis. Were they intra or extra uterine acquired. Was it a case of extra-uterine appendicitis. How long had the child had the appendicitis.

#### CASE 11

A negro woman, forty years old, sustained a gunshot wound penetrating the abdomen with perforations. This occurred about thirteen years ago. Hospital care was not available for negroes in Greenwood at the time. We operated where we found them and left them when we operated. Later we operated in our offices and ambulated them home after operation. Strange as it may seem I believe we had as good results then as now with best hospital facilities. I sometimes think we even had better results. We checked and double checked instruments, dressings, anesthetics, everything, and soon drove the thirteen miles to the home of the wounded.

After I had opened the abdomen I began looking after the perforations, when the anesthesiologist called for more ether. Strict search revealed no anesthetics of any kind in our kit. Requisition was quickly made upon motor cars and ether-gasoline switch made and operation completed satisfactory to us.

Dr. J. D. Harrison anesthesiologist, who by the way daddies the gasoline idea, states the duration of gas anesthesia was an hour, Dr. C. J.

Scurry, assistant, makes the duration one half of an hour.

The point of interest in this case was and is the ether gasoline switch and the duration of the gasoline anesthesia.

#### CASE III

An Octoroon was delivered of her first child, normal delivery. Two years later a physician was called. After some hours the pains died away and the physician left instructing the patient to send for him as soon as the pains started up. Two years later he was called and delivered her of a normal child. The delivery was normal. Two years later she was delivered of her third baby.

Some time later her physician was hastily summoned. He found the family greatly excited. He was told that the woman at stool had passed the thigh bone of a child. The bone was in evidence. He referred the case to me. I got the same history as family physician. To this day the negroes resent any change of the history.

On examination the mass was easily found. The bones easily felt. A diagnosis of lithopedion made and operation was advised. The abdomen was opened and container and contents removed. A part of the fluid contents escaped and with it the vilest odor that ever saluted any one's olfactory. In addition to the odor there was a gas that acted as chlorine irritating all sensitive surfaces.

Every one grew ill, windows were opened. Many were forced to yield to the inclination to empty the contents of the stomach. The operation was completed and the patient made a quick recovery. While I was washing up the orderly brought what appeared to me to be a complete lithopedion, every bone of a child. Two years later, this woman brought forth a boy. Her next labor was twins. She has now eleven children. Not long since I saw the whole family in a cornfield pulling fodder and a happier family I have not seen.

## *PRESIDENT'S PAGE*

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I have been an officer of The South Carolina Medical Association in one capacity or another for about twenty years.

I have given my very best for organized Medicine. In the main, I have had wonderful cooperation and support in all activities. The many years that I was a member of the Board of Councilors was most pleasant and satisfactory, the period that I served as chairman of the Board was generally satisfactory in every way. All members worked pleasantly and happily together, there was never any discord or dissensions, we always discussed all matters in open meetings. There was never any visible politics emanating from any member of Council, either in his own behalf or anyone else.

I have traveled over a large part of the state attending medical meetings and have discussed constructive principles pertaining to efficient organized medicine. I have enjoyed the work to a great degree. I trust that all of my activities have not been in vain; I realize that I have made many errors, though, I hope that I have made few enemies and a large number of friends and trust that I have the respect of all. Great improvement in the past twenty years can be seen both in Education and in the application of Scientific Medicine.

The greatest need as I see it for the profession today is unselfish honest constructive cooperation in all activities. Whatever, the Medical Profession want that is just and right, we can have not for the mere asking but by earning.

Much has been said and written in recent years relative to State Medicine Political Control of the Practice of Medicine. The people and politicians want it. If the profession wants State Medicine we will have it.

To the contrary if we do not care for such a system then we need not be burdened with it. It is up to us, it is our task, certainly no one else.

A few thoughts relative to our Medical College:

Do we want a class A Medical School in South Carolina, one that we can all point to with pride? If so we can and will have it.

The State certainly needs it, the people should have it, and the Medical Profession want it. The entire Medical Profession can all testify to that. We must have a class A school or nothing. Honest, unselfish, constructive cooperation by the Medical Profession will continue the College in perpetuity.

To repeat and impress, what ever the Medical Profession wants and should have can be secured, provided we are willing to work for it.

I am one hundred percent for all to earn what they desire and receive. Those who work should eat, those who are able but are not willing to work should not eat.

SAMUEL E. HARMON, M.D.



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### DECEMBER, 1935

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#### THE PROGRESS OF SURGERY IN SOUTH CAROLINA

The early days of our state saw little surgery that was not demanded by grave necessity. Phlebotomists there were, and those who occasionally tapped the ascitic abdomen, or amputated with all the terrors of the times before the development of adequate anaesthesia. Even up to 1830 the field of the surgeon was limited

largely to amputation, lithotomy, ligation and the treatment of fractures and dislocations. The operating room was a chamber of horrors, and men shrank from the infliction of pain without reasonable expectation of the success of operation.

The brilliant progress of surgery in the past century is familiar to most of us, and the contribution of South Carolinians is not unrecognized among the historians. For the first time the *Journal* is devoting a special number to the recognition in print of the achievements, past and present, of our own men of surgery. The surgeons of today are made familiar to us by their visible works and their writings in this and other journals. They are enormously refined successors of the man in Orangeburg who in 1779 amputated a mangled leg with the aid of a knife, a carpenter's saw, and red-hot tongs. They likewise follow in the steps of early original workers such as John King of Edisto, who in 1816 operated upon extra-uterine pregnancy by way of the vagina, of Benjamin Simons of Charleston, who did valuable work in bone surgery and published a book on the bones in 1801, of Joseph Glover of Charleston, who excised the spleen, amputated the prolapsed uterus (1813), operated for cataract and for stone in the bladder. Their trephines follow that of John Douglass of Chester (1836), their hysterectomies follow those of John Bellinger and Eli Geddings, their laparatomies come gracefully after those of Bellinger, R. A. Kinloch of Charleston, Cornelius Kollock of Cheraw, and Manning Simons of Charleston. Neurological surgeons today may refer to the nerve suturing of F. L. Parker of Charleston.

These were men "before Lister." Afterward came many who saw the development of modern surgery and the tremendous expansion of the field of operative work. They have seen South Carolina keep abreast of surgical development in technique, equipment, and training. They have seen the growth of hospitals and the extension of the boon of competent surgical care to all parts of the state.

Those surgical papers which today appear in the *Journal* are fitting continuations of the observations of such early surgeons as Simons, Geddings, Julian Chisolm, and others who pub-

lished books on surgery early in the 19th century, and of the papers on surgery which appeared in the short-lived *Carolina Journal of Medicine, Science, and Agriculture* and other publications.

South Carolina has been the source of remarkable surgery in other parts of the country, where the talents of Marion Sims, Gaillard Thomas, Simon Baruch, Chisolm, Miles, Logan, Gaston, Nott, and others have reflected glory on their native state.

More than once in the past some eminent medical orator has proclaimed that surgery had reached its peak of achievement, yet in a brief time his ideas have been proved false by the development of some new procedure or anesthetic or other refinement. Doubtless unsuspected fields still await the ambitious surgeon, and in the search for them the surgical talent of South Carolina will be well in the front, and eager and competent to develop them whenever they shall be opened.

J. I. W.

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#### GREETINGS AND COMMENTS ON THE CLOSING YEAR

The South Carolina Medical Association and its allied interests have made significant progress during the year now coming to an end. Some of the problems, economic and otherwise faced at the beginning of the year have been at least given careful consideration and in a number of instances agreeably solved. Many of the fears of an economic nature while not dissipated have been somewhat clarified. There is evidence of greater unanimity of action on the part of organized medicine with reference to safe and sound policies of medical economics than hitherto has been the case. This is the one desideratum most hoped for and out of which will come success in the end. Nearly everywhere medical men have been giving much more serious thought to economics in this country than in all the previous history of medicine and that has been most devoutly wished for for a long time. We say this because medical men have the ability, the training and the vision which when concentrated on any one or more problems is very apt to lead to successful issues. This has been

clearly proven on many battle-fields for thousands of years in curative and preventive medicine why not in economics.

The membership of the Association shows an increase, the Journal has the benefit of increased advertising receipts and this in turn will provide for improvement. The scientific aspects of the State Medical Association have been remarkably successful throughout the State: A high point in scientific programs for the State organization was reached at the Florence meeting. The Association and the public suffered tremendous losses during the year from deaths in our membership. In the early part of the year we lost our beloved President, Dr. Wm. Egleston. In recent weeks two distinguished members of the profession passed on. We refer to Dr. Waller H. Nardin of Anderson and Dr. Rosa H. Gantt of Spartanburg. Dr. Nardin had been an outstanding figure in his specialty in the Piedmont Section of the State for many years. He gave of his best also to organized medicine in his community. Dr. Rosa H. Gantt was a pioneer as an eye, ear, nose and throat specialist in the South, if not in the United States. She was one of the first, if not the first, woman graduate of the Medical College of the State of South Carolina. She gave largely of her life and interests to the organized work in her native state and with such great success that her brilliant attainments early attracted attention throughout the country in women's medical organizations. She was honored in many spheres of activity both medical and otherwise reaching the highest pinacles within the gift of her fellow workers.

The Association enters upon the new year with the Greenville meeting in the offing, April 21, 22, 23 with every promise of continued growth and development. Under the forceful leadership of President S. E. Harmon not a single interest of the Association has been neglected in so far as it has been possible to bring about satisfactory adjustments. Council has met frequently and given due consideration to every matter brought before it. No appeal has been ignored and no issue denied careful deliberation. This means that the members of the Council representing as they do all sections of the State have the ear of every doctor in their respective districts for any pur-



pose whatsoever connected with organized medicine and this relationship in turn is reflected at every meeting of the Council for the benefit of the entire Association.

The Journal extends cordial greetings to the loyal members of its Staff, to the many contributors who have done so much to make the Journal readable and to every member of the South Carolina Medical Association. We have a great organization with a glorious history which has been sustained for nearly a hundred years on the part of innumerable devotees to the highest ideals of South Carolina Medicine. We approach 1936 with every confidence of continued harmony and effort for the best interests of the organization.

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#### THE MEDICAL COLLEGE CHALLENGES OUR SUPPORT

In another part of this Journal appears the President's Page and therein Dr. Harmon has called sharply to our attention the urgency of the entire medical profession of South Carolina rising to the requests of the college authorities in support of the institution. By this time a letter has been received from the Dean of the Medical College by every doctor in the State requesting that he see his representatives in the legislature personally and urge upon them the necessity for larger appropriations for the College in order that it may continue doing the high grade work that it has been famous for for one hundred and eleven years. This situation has come about because of the rapid progress of medicine and the allied sciences. The necessity for larger appropriations for medical education is world wide and not purely a local problem. This progress in medicine has been directly responsible for the greatly lengthened period of human life and happiness on the part of the public. This increased appropriation for the

Medical College at Charleston is requested in order that the public may continue to profit by the great achievements of modern scientific medicine. The College has been notable for graduating large numbers of general practitioners rather than a few highly specialized men. These graduates have gone out into the remotest sections of our State and have there reflected the splendid training received at our Medical School in the prevention and cure of disease. As it stands now South Carolina has fewer doctors per capita than any State in the Union and it is unthinkable that this situation should be ignored by our State Legislature. We wish to support President Harmon one hundred per cent in his appeal for our time honored State Medical College.

## REPRINTS!

Type used in each issue of  
The Journal is held for  
thirty days and in order  
to get the benefit of this  
saving, orders should be  
received within this time.

PROVENCE, JARRARD  
AND MARTIN

Greenville, S. C.

## SOUTH CAROLINIANA

J. I. WARING, M.D., CHARLESTON, S. C.

A Convenient and Simple Method of Early Diagnosis of Scarlet Fever—By I. S. Barksdale, R. M. Pollitzer, and F. P. Simpson, Greenville. (Arch. of Ped. 52: 633, Sept. 1935).

This consists in culturing the throat swab on Loeffler medium, incubating it for six to twenty-four hours, making a stained slide preparation, and if streptococci are present, performing an agglutination (or lysis) test with Schultz-Carlton serum.

Treatment of Fractured Skulls—By C. O. Bates, Greenville. (Am. J. of Surg. 30: 66, Oct. 1935).

Rest above all, close observation, relief of intracranial pressure by glucose and saline solutions, or possibly by lumbar puncture and decompression, come ahead of the care of the fractured bone.

A Brief Consideration of Radical Surgery in the Paranasal Sinuses—By J. W. Jervey, Greenville. (Sou. Med. Jour. 28: 1026, Nov. 1935).

The author finds carbohydrates the curse of the sinuses, and Caldwell-Luc, and similar operations the curse of the over enthusiastic surgeon—and his patient.

Functional Studies in Patients with the Neurodermatoses—By J. M. Van de Erve, Charleston, and S. W. Becker, Chicago. (J. A. M. A. 105: 1098, Oct. 5, 1935).

The authors find that these patients show general instability, and consider that measures

directed toward the relief of their nervous exhaustion are most important in the therapy of the skin manifestations.

A Technic for Hepaticoduodenostomy—By Le Grand Guerry, Columbia (Ann. of Surg. 102: 780, Oct. 1935).

A brief discussion, and diagrams illustrating technic of the operation.

Fracture of the Hip Joint—A New Method of Treatment—By A. T. Moore, Columbia (Internat. Surg. Dig. 19: 323 June 1935).

The author describes his technique of local anaesthesia and fixation of the fragments by stainless steel pins. He finds casts and other apparatus unnecessary. Illustrated.

Recent Research on Malaria Therapy of Venereal Diseases—By B. Mayne, Columbia (South. M. J. 28: 750 Aug. 1935).

A review of recent work on the subject.

Transurethral Prostatic Resection with Report of 748 Cases—By T. M. Davis, Greenville (South. M. J. 28: 693 Aug. 1935.)

A summary of the author's successful experience with this operation.

Failure of Intravenous Hydrochloric Acid to Shorten Anaesthesia—By F. W. Kinard and J. van de Erve, Charleston (Am. J. Med. Sciences 190: 242 Aug. 1935).

The authors were unable to produce early recovery in animals anaesthetized with either, nembutal, or paraldehyde.



## PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

### ABSTRACT No. 295 (28600)

Dr. Reveley (reading):

Negro female, age 48 years, admitted 8-20-35, died 8-27-35.

Tumor mass first noted in abdomen 10 years ago. Profuse menorrhagia for 5-6 years prior to menopause in May '35, no bleeding since. Continued fever for past 3 weeks, with pain and tenderness in both lower abdominal quadrants. Frequency of urination with pain throughout act of micturition. Numerous urinary stones passed two weeks ago, varying in size from grains of sand to a matchhead. Genitals had been painful and swollen for two weeks. "Mouth has been sore recently." Confined to bed for past two months.

Mother died at age 44 from cerebral accident. Other family history irrelevant. Patient married 23 years, miscarriage 20 years ago, no other pregnancies. Previous illnesses: measles, whooping cough, malaria. Luetic and Neisserian infection denied. Laparotomy in 1916, nature not disclosed. Review of systems negative except for "discharge and salpingitis 30 years ago."

Examination: An anxious, acutely ill woman of medium build. Temp. 101.2, pulse 114, respirations 32 per minute. B. P. not recorded. Mucous membranes pale. Eyes, ears, nose negative. Tongue furred, reddened, discrete ulcers on cheeks and lips. Teeth carious, gums bleed readily. Throat congested. Thyroid not palpable, lymph glands not enlarged. Breasts normal. Lungs and mediastinum clear. Heart sounds slightly muffled, cardiac exam. otherwise normal. Abdomen: Scar in midline. "Uterus enlarged to above umbilicus." Abdomen generally distended. Much tenderness and rebound tenderness in lower quadrants. Involuntary muscle rigidity in lower quadrants. Pain on pressure in both kidney regions. Labia: edematous, several ulcers noted. Vulva hyperemic and tender. Pelvic Exam: not recorded.

Laboratory: Urine (8-20), cath. spec., yellow, cloudy, acid, alb. 1 plus, sugar, acetone, casts negative. Leukocytes 20-30 per HPF, blood 4-5 per HPF. Many short motile bacteria. Blood (8-20, 8-22) Hb. 47 per cent, 50 per cent; WBC 25,500; 23,500; polys 88 per cent, -; lymphs 2 per cent, -; monos 8, -; eosinophils 2 per cent, -. Smear (8-26) (from mouth?) negative for Vincent's organisms, mixed organisms 4 plus.

G-U Consultation (Dr. Ravenel), 8-21: "Bladder full of foul purulent material. Floor of bladder covered with thick layer of purulent material. Right ureter found and catheterized. No obstruction to No 6 catheter. Left ureter not found." (Cath. spec. from right kidney: amber, clear, INS for chemical tests, epithelium occ., leukocytes occ. blood 0.)

Course: Temp. continuously elevated for first 4 days, 99-102.6, then stayed near normal for 2 days, then rising rapidly on day of death to 104. Pulse followed temp. Resp. 20-55, becoming rapid on day of death. Continued to complain of lower abdominal discomfort and dysuria. Treated by bladder irrigations. Nauseated and vomited on 8-24. Apparently improved slightly during stay, then gradually became weaker and died at 8:45 A. M. on 8-27-35.

Dr. R. L. McCrady (conducting): Mr. Goodlett, will you size up the situation for us?

Student Goodlett: With a history of a tumor mass in the lower abdomen for ten years, associated with menorrhagia, we must consider fibroids of the uterus. The fact that the menorrhagia ceased at the menopause is also suggestive, as it is well known that fibroids cease growing at the menopause. Pressure by a fibroid on the bladder could cause urinary symptoms, and predispose to a cystitis, which in turn would predispose to urinary stones. The pain and tenderness in the lower abdominal quadrants suggest a chronic pelvic inflammatory condition, and the previous history of salpingitis is also suggestive. The fever and leukocytosis

are possibly due to degeneration and infection of the fibroids, altho such infections are rather uncommon. On the other hand, as a faint possibility, the fibroids may have undergone malignant degeneration.

I believe that this patient had fibroids of the uterus, with compression of the bladder and probably of the left ureter, with infection of the urinary tract. I also believe that she had a chronic salpingitis, with inflammatory pelvic adhesions.

Dr. McCrady: Mr. Marshall, what can you add to the discussion?

Student Marshall: I believe that she had fibroids of the uterus too, with gradual occlusion of the left ureter. I believe that a hydronephrosis then developed, followed either by a pyonephrosis or a pyelonephritis. Then, as the infection descended the urinary tract to the bladder, I believe that a cystitis developed, and that the cystitis and the pyelonephritis are the important things in this case.

I do not feel so sure about the salpingitis; it seems to me that there should have been symptoms between thirty years ago and now. I believe that she had a salpingitis at one time, but that it is not important in the case as we now see it.

Dr. McCrady: Mr. Bethea?

Student Bethea: I believe that we must exclude carcinoma, either of the fundus of the uterus or of the cervix. Such tumors frequently extend to the floor of the bladder and cause infection there. I am not sure of kidney infection. The one kidney that was catheterized showed no evidence of infection. Following extension of the tumor to the bladder, I believe that the infection passed through the bladder wall, with a localized peritonitis developing. I do not believe that she had salpingitis, and think that the laparotomy thirty years ago was for the removal of the tubes.

Dr. McCrady: Mr. Elders, will you continue?

Student Elders: To me the most important part of this case is the bladder. We know that she had a cystitis, and the background for the cystitis must be determined. Many cases of cystitis are due to urinary obstruction, either above or below the bladder. The tumor mass

in the pelvis was probably a fibroid, probably compressing the left ureter, causing an infection of the left kidney and then of the bladder. The mass could also have been an ovarian cyst or an intra-ligamentous cyst, also with urinary tract obstruction. But this urinary infection must have been very virulent, to cause so high a fever and leukocytosis. The laparotomy was probably a salpingectomy, as she had no pregnancies after that. I believe that she had a peritonitis, probably occurring during her hospital stay, at the time that the pain became less and the fever subsided. The origin of the peritonitis was probably the bladder.

Dr. McCrady: Mr. Keels, can you add something?

Student Keels: I agree with the things that have been said about a fibroid, with urinary tract obstruction and infection. It must have been a very virulent cystitis, probably a gangrenous cystitis. Termination could have been either by a peritonitis from extension from the bladder, or by septicemia from the urinary sepsis.

Mr. Bethea mentioned the possibility of a carcinoma, primary in the uterus, extending to the floor of the bladder; that would have been seen at cystoscopic examination.

Dr. Lynch: I have given Mr. Gaston the preserved specimen (urinary bladder, left ureter, left kidney) and will ask him to describe them and make the pathological diagnosis.

Student F. P. Gaston: The bladder shows extensive destructive changes, extending from the mucosal surface well into the walls. This destruction has a patchy distribution throughout the bladder. At one point there is a deep-seated ulceration extending nearly through the walls of the bladder. Its edges are polypoid and fungating. There is no evidence of obstruction or infection of the ureter or kidney, and the kidney appears to be functioning. I believe that this is a carcinoma of the bladder.

Dr. Lynch: Gaston's idea about the case is quite right. There is a primary carcinoma of the bladder, unrelated to any condition in the uterus. The tumor is represented by the large ulcer with the polypoid overgrowth of its edges. The bladder walls are greatly thickened and heavily infiltrated. This cancer is of the epider-



moid form, resembling skin cancer rather than the more common papillary bladder cancer. The bladder had ruptured and there was a localized peritonitis in the pelvis, represented by two large abscess cavities, one in front of the uterus and behind the bladder and the other between uterus and rectum. The more posterior abscess was probably originally part of the anterior one, and became separated by the formation of the peritoneal exudate. The patient died of sepsis.

There was a fibromyoma of the uterus in a sub-mucous position, and this was doubtless the cause of the uterine bleeding that ceased at the menopause. There was no ureteral obstruction although the ureters could not be found from the bladder surface at autopsy; they were probed easily from above. The kidneys were not infected.

Dr. Ravenel: I don't know that I have any apologies to make. The urological examination was unsatisfactory and incomplete. The bladder urine was very foul and the bladder walls were covered with a thick necrotic exudate that prevented good cystoscopic visualization. By good luck I found one ureter and catheterized it. The other could not be found for the same reason that the bladder tumor could not be found; they were obscured by the exudate. I was of the opinion that the patient had a degenerated fibroid of the uterus and a gangrenous cystitis.

Many of the men have talked about ureteral obstruction. I imagine that they were basing those statements on the fact that the left ureteral orifice could not be found. There were no symptoms of ureteral obstruction, such as pain in the kidney region. That the orifice cannot

be found does not necessarily mean that that ureter is obstructed; in this case it did not mean that at all.

Such a case as this is the only sort that I can think of where peritonitis follows cystitis, unless, of course the bladder is ruptured by trauma. The bladder wall would have to be extensively eroded for spontaneous perforation to take place, and that would almost have to mean a tumor.

Dr. McCrady: If the men who discussed this case had insisted more on the urinary symptoms, the urine examination and the cystoscopic findings, the correct diagnosis might have been arrived at. These are certainly the most clear-cut facts in the case. Unfortunately, the history is somewhat incomplete, and the case could hardly be accurately diagnosed with the data at hand.

Dr. Lynch, was that fibroid large enough to have been palpated through the abdominal wall "above the umbilicus?"

Dr. Lynch: No. What was felt was very probably the matted intestines about the abscesses in the pelvis.

#### NEWS ITEM

The South Carolina Medical Association will meet at Greenville, April 21, 22, 23, 1936. The program committee, of which Dr. George W. Wilkinson, Greenville, S. C., is the Chairman, announces that a good many titles of papers to be read have been received, but it is desired that several more titles be submitted at an early date. These titles may be sent to the Committee or to the Secretary of the Association.

## Waverley Sanitarium, Inc.

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## SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

### "THE TREATMENT OF VARICOSE VEINS"

(Is Systemic Disease a Contraindication?)

It is important that we have as definite as possible an idea of the contraindications to the treatment of varicose veins by the injection of sclerosing solutions. The opinions of various authors vary from stipulating practically all acute diseases, and chronic diseases of any degree of severity, to only those which are of themselves self evident. To recognize too many will result in withholding the treatment from some who need it most. On the other hand to recognize too few will lead to unwarranted reactions and bad results. To determine the proper mean is the difficulty. Only from the review of large series of cases can reliable deductions be drawn. In this respect it would be well to consider the series of 1000 cases reported by Dr. Edward A. Edwards of Brookline, Mass. and his comments upon it. J.A.M.A. 104:2077, June 8, 1935.

The study is of 1000 patients treated in the circulatory clinic of the Boston City Hospital since 1929. Every patient was examined first by the medical department. The examination varied from a thorough study to a physical examination of the heart and lungs, and urinalysis. Accordingly one may presuppose that the records might err on the side of leaving out systemic disease present in those patients receiving only a cursory examination.

The incidence of more serious diseases with more objective changes was 37.5 per cent. Under heart disease in 123 patients were reported hypertension, arteriosclerosis, myocarditis, auricular fibrillation or cardiac hypertrophy. Angina pectoris was diagnosed in only a few cases, but heart pain was present in many. Eight patients had nephritis, while an additional forty-four had albuminuria. There were seventy cases of respiratory disease including chronic bronchitis, bronchiectasis, emphysema and tuberculosis.

Among other conditions reported were diabetes, syphilis, cirrhosis of the liver, thyroid

disease of most types, and peptic ulcer. Malnutrition and dental caries, while not specifically mentioned, were no doubt quite prevalent as at least half of the patients were destitute, receiving help from a city welfare department.

As to the treatment, every one of these patients received at least one injection of quinine and urethane and some as many as ninety-five. Other substances less frequently used were sodium chloride 20 per cent, sodium chloride 15 per cent with glucose 25 per cent, or invert sugar with sodium chloride. In 75 cases the saphenous vein was ligated preliminary to the injections.

The results were as follows. There were no deaths which could be attributed to the treatment. The systemic disease from which the patient was suffering could not be said to have been affected adversely in any case, including those with diabetes, nephritis, and cardiac decompensation. Of course in many cases the chronic diseases progressed and patients died as a result of them, as would be expected.

There were occasional cases of vomiting, dizziness, and moderate allergic shock after the injection of quinine. Aside from the above, only three untoward general reactions were noted, one case of vomiting and dizziness, and two cases of slight uterine bleeding; in all three instances the patients recovered uneventfully.

From these results the author takes the positive stand that severe systemic disease is not a contraindication to the injection treatment of varicose veins. It goes without saying that sugar solutions are to be avoided in diabetic patients and kidney irritants (not quinine) in nephritic patients, and that bed-ridden patients are not fit subjects due to the danger of propagating thrombosis with danger of embolism.

Furthermore the point is made that a patient with one of these considered diseases is benefited by being rid of varicose veins and their complications, ulcer and phlebitis. This is important from relief of pain and the clearing up of infection. Infection is probably always present in varicose ulcer and in the affected leg. Like-



wise it may be present in phlebitis. It stands to reason that the patient would benefit by clearing up such longstanding foci.

No pregnant case is included in this series due to a hospital ruling to that effect. However in private practice the author has successfully used this treatment in painful or large and thin walled varices likely to give trouble. No attempt is made to obtain a complete sclerosis as the tendency is for these veins to subside greatly after the termination of the pregnancy.

Editor's Note: It is hoped that the foregoing review will not encourage carelessness in applying the injection treatment of varicose veins. Needless to say its purpose is to point out that it may be safely used in a class of patients very much in need of it and from whom it is often withheld. Possible complications are ever present. Conservatism and care are always necessary, but especially so in treating patients additionally burdened with serious systemic disease.

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## BOOK REVIEWS

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DR. COLWELL'S DAILY LOG, a brief, simple accurate financial record for the physician's desk. Published by Colwell Publishing Company, Not Inc., Champaign, Illinois.

*Forms found in the Daily Log*

In the Front of the Book

1. Title Page
2. Calendar
3. Instructions for Use.
4. Illustrated Forms

*Daily Pages*

*Following Each Month*

1. Inoculations
2. Business Summary
3. Expense Sheet One
4. Expense Sheet Two
5. Personal Account
6. Surgical Record
7. Narcotics—Appointments

*In the Back Part of the Book*

1. Obstetrical Waiting List
2. Annual Summary
3. Record of Deaths

The perfect book-keeping system for doctors has not yet been discovered but this book will meet the needs of a large number of physicians regardless of the kind of practice they are engaged in. It has many good features and most important of all is easy to operate. It is a very helpful system when the time comes for reporting to the income tax collector. The book is in the ninth year of its publication and that speaks well for its continued popularity.

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NAMES OF SURGICAL OPERATIONS—Western Surgical Association. Price \$3.00. Presented with the compliments of the Committees on Names of Surgical Operations of the Western Surgical Association.

The development of surgical literature has been

so enormous as a result of the vast field over which surgical operations have spread that it has been difficult to even approach a standardized nomenclature. Of course this feature is not even confined to surgical science but to many other sciences. Anyway the book is the product looking toward standardization of many of the leading surgeons of the country acting as committees and the work has been well done and will be a landmark for a long time to come.

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THE STOMACH AND DUODENUM: By George B. Eusterman, M.D., F.A.C.P., Head of Section in Division of Medicine, The Mayo Clinic, Professor of Medicine, The Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota; and Donald C. Balfour, M.B., M.D. (Tor.), LL.D., F.A.C.S., F.R.A.C.S., Head of Section in Division of Surgery, The Mayo Clinic, Professor of Surgery, The Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota; and Members of the Staff, The Mayo Clinic and The Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota. 958 pages with 436 illustrations. Philadelphia and London: W. B. Saunders Company, 1935. Cloth, \$10.00 net.

This is a book of nearly a thousand pages and comes from one of the outstanding clinics of the world. Nowhere, perhaps, has there been an equal wealth of material from which to compile studies on the diseases of the stomach and the duodenum. These organs have been subject to consideration for many centuries but of course only the development of modern medicine and surgery as evidenced by this significant contribution could possibly clarify many of the problems involved. The physiology of the stomach and duodenum has been well presented by Alvarez while the history has been duly

considered by Wilbur. The pathology of course is all important and no one is more competent than MacCarty to delineate the same. The examination of these patients is now done on a scientific basis. Then comes the question of whether medical or surgical treatment for many of the lesions discovered. It is fortunate that in such a great clinic as the Mayo Clinic with its large medical as well as surgical divisions every form of treatment that promises success may be evaluated. Much has been said in the public press recently about Diaphragmatic Hernia. A chapter in this book shows that this lesion is by no means a spectacular rarity at the Mayo Clinic. The illustrations are most excellent and all in all this is one of the best books on the subject ever published in this country.

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A MARRIAGE MANUAL, A Practical Guide-Book to Sex and Marriage by Hannah M. Stone, M.D., Medical Director of the Birth Control Clinical Research Bureau and of the Marriage Consultation Centers at the Community Church and Labor Temple, New York and Abraham Stone, M.D., Adjunct Urologist at the Sydenham Hospital, Co-Director of the Marriage Consultation Centers of the Community Church and Labor Temple, New York. New York—Simon and Schuster—1935.

Many books along this line are of no scientific value whatever. This one is. The book is written in the form of hypothetical consultations between a physician and a young couple about to be married. A kind of catechism in other words. There is enough of physiology and anatomy for a fairly accurate basis for the inquiries. It would seem to be a safe manual to put in the hands of the more intelligent candidates for matrimony.

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A TEXTBOOK OF BACTERIOLOGY: By Thurman B. Rice, A.M., M.D., Professor of Bacteriology and Public Health at the Indiana University School of Medicine. 551 pages with 121 illustrations. Philadelphia and London: W. B. Saunders Company, 1935. Cloth, \$5.00 net.

This book is the outcome of a desire on the part of many teachers for a shorter text book, both for the student and for the practitioner of medicine. The opening chapter is on the History of Bacteriology and then comes the Bacteriology of everyday life. The succeeding chapters present in a very practical way the most important phases of our knowledge of bacteriology and its application to modern life in medicine and out of it. For a refresher course to the busy doctor this is the best book we have seen.

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DISEASES OF THE THYROID GLAND, By Arthur E. Hertzler, M.D., Chief Surgeon, Halstead Hospital; Professor of Surgery, University of Kansas. With a chapter on Hospital Management of Goiter Patients, By Victor E. Chesky,

M.D., Chief Resident Surgeon, Halstead Hospital. Third Edition, Entirely Rewritten. St. Louis, The C. V. Mosby Company.

The volume before us is a real monograph and by and large monographs have contributed more from an inspirational point of view than great systems of medicine. In the monograph the reader, particularly, if he knows the author personally and has visited his clinic relives the activity of the surgical amphitheater as he peruses the personal contributions of the master. This book comes from a small clinic as the author says in his preface to the first edition, "a small country hospital." The various chapters include not only the surgical side but the medical aspects of the thyroid glands. There is an important chapter on the hospital management of goiter patients. There are 181 beautifully done illustrations. The publishers have done a fine piece of work. It is a beautiful book. The price is \$7.50.

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PREVENTIVE MEDICINE AND HYGIENE, By Milton J. Rosenau, Professor of Preventive Medicine and Hygiene Harvard Medical School; Professor of Epidemiology, Harvard School of Public Health; Formerly Director of the School of Public Health of Harvard University and the Massachusetts Institute of Technology; Formerly Director of the Hygienic Laboratory, U. S. Public Health Service.

With Chapters Upon

Mental Hygiene, By Abraham Myerson

Sewage and Garbage, By Gordon M. Fair

Vital Statistics, By John W. Trask

Statistical Methods, By Carl R. Doering

Conservation of Vision, By J. Herbert Waite

Contraception, By Eric M. Matsner

Sixth Edition, D. Appleton-Century Company, Inc., New York, London.

It has been nearly twenty years since this classic in preventive medicine was first published. At that time it took its place in the front rank both as a text-book and for public health workers and others interested in the subject. This is the sixth edition. It has been extensively revised and entirely reset, in fact, changes have been made on almost every page.

These subjects appear for the first time: Venereal Disease, Contraceptives, Sex Hygiene, Heredity and Eugenics, Drug Addiction, Vitamins and the Deficiency Diseases, Infant Mortality, Industrial Hygiene and Diseases of Occupation, Scarlet Fever and Undulant Fever.

This particular volume numbers among the contributors some of the most distinguished writers on public health in this country. In other words it is a sort of joint production and therefore still more authoritative and interesting than otherwise might be the case if it were strictly speaking a monograph.



THE HUMAN FOOT, ITS EVOLUTION, PHYSIOLOGY AND FUNCTIONAL DISORDERS, By Dudley J. Morton, Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University. Morningside Heights: New York, Columbia University Press, 1935.

This is the most fascinating resume of our knowledge about the human foot that has ever come to this reviewer's desk. Even a brief contemplation of the quackery that has grown up in connection with the disabilities of the human foot shows how wide spread a need there is for more concentrated effort by science, such as is the aim of orthopedic surgery for a saner contemplation of this part of the human anatomy. The uses and abuses of the human foot have been well considered in this volume. The illustrations are very good both in comparative anatomy and human anatomy. The physiology has been discussed in an admirable way. In the examination and diagnosis of disorders of the human foot the X-ray has come in for major praise. The author estimates that from the examination of college students about forty per cent of them have disabilities capable of limiting the normal activities of the individuals. Columbia University has rendered a distinct service in publishing this book.

RUSSELL A. HIBBS, PIONEER IN ORTHOPEDIC SURGERY, 1869-1932, By George M. Goodwin, New York: Morningside Heights, Columbia University Press.

Dr. Hibbs lived a colorful life and contributed to the outstanding epochs in orthopedic surgery of the world. Some of the chapters in the book are as follows:

- Child and Student
- Intern and House Surgeon
- Surgeon in Chief
- Hospital Administrator
- Innovator in Surgical Technique
- Defender of Surgical Fusion
- Recognized Prophet
- Teacher and Medical Economist
- Sponsor of the Kane Fellowships
- Man and Citizen

This book would make an attractive Christmas present to any doctor who is remotely interested in the wonderful advances of orthopedic surgery. The price is only \$2.00.

BEHAVIOR DEVELOPMENT IN INFANTS, A Survey of the Literature on Prenatal and Postnatal Activity, 1920-1934, By Evelyn Dewey. Published For The Josiah Macy, Jr., Foundation By Columbia University Press.

Behavior problems may be classed among the impressive challenges of modern medicine and particularly to the devotees of mental hygiene and the pediatricians in general. Perhaps, for the first time this book brings together in one place a satis-

factory summary of our present knowledge in this field. Some of these conclusions have been the result of child development clinic activities now rather a growing phase of child welfare interest. A large section of the book discusses neonatal behaviour but the greater part attempts to crystalize in the period of infancy the best thought of the world since 1920. The bibliography, therefore, is extensive and carefully compiled.

SURGERY: QUEEN OF THE ARTS and OTHER PAPERS and ADDRESSES; by William D. Haggard, M.D., F.A.C.S., D.C.L., Nashville, Tennessee. Professor of Clinical Surgery, Vanderbilt University School of Medicine; Surgeon to Vanderbilt Hospital and St. Thomas Hospital; President, Southeastern Surgical Congress; former President of the American Medical Association, the American College of Surgeons, the Interstate Postgraduate Medical Association of North America, the Southern Surgical Association, and the Tennessee Medical Association; formerly Lieutenant-Colonel, Medical Corps, U.S.A.; Consultant in Surgery, Mesves Hospital Center, A.E.F. With Foreword by William J. Mayo. 389 pages with 41 illustrations. Philadelphia and London: W. B. Saunders Company, 1935. Cloth, \$5.50 net.

Few surgeons are better known in America than Dr. William D. Haggard, Professor of Clinical Surgery, Vanderbilt University, School of Medicine, Nashville, Tennessee. A teacher in one of the most forward looking schools in this country and yet one who has found the time to make extraordinary contributions to organized medicine. Both in the amphitheater and on the rostrum of numerous medical societies Dr. Haggard has inspired medical men of all ages toward greater achievement in their profession. The author of this book is well known in South Carolina. Just a few years ago he was guest speaker at a meeting of the State Medical Association. Many students from South Carolina have enjoyed the privilege of sitting at the feet of this master surgeon and teacher. There are several addresses touching, one may say, the romance of medicine deeply. It will be a sad day when romance is eliminated from medicine by the pursuit of ends wholly material. There is much of history in this book for the author has lived through and been an important figure in the development of medical history in America. The book also through the various addresses is a valuable volume on clinical surgery. There are many illustrations throughout the volume.

LAW AND CONTEMPORARY PROBLEMS, Published Quarterly, January, April, June and October by the Duke University School of Law. David F. Cavers, Editor. Editorial Advisory Board: L. L. Fuller, H. C. Horack, Malcolm McDermott. (The Editor and Advisory Board

are members of the Faculty of the Duke University School of Law).

School of Law, Vol. 11, October, 1935, Duke University, No. 4.

The out-put of the Duke University Press in whatever field deserves careful consideration. This quarterly comes from the School of Law and for the most part concerns the medical profession as will be seen by the contents.

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# THE JOURNAL

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### ACNE VULGARIS

By

J. RICHARD ALLISON, M.D.,  
Columbia, S. C.

Acne Vulgaris is described by Pusy as "Folliculitis of the Sebaceous glands." All true Acne lesions originate with the sebaceous glands and follicles. The lesions vary from simple comedones, papules and pustules on an oily base, to large deep-seated abscesses with areas of destruction and pus formation. These latter lesions often form large pus sacks, and cause partial destruction of the sub-cutaneous tissues resulting in severe scar formation. True Acne is practically always accompanied by oily Seborrhoea and at times Seborrhoeic Dermatitis involving the adjacent skin areas. The disease is usually confined to the face, neck and upper portion of the back and chest. In some types of Acne, this scar formation is so severe that it ranks Acne as the greatest of all scar forming diseases, Small Pox not excepted. This type is usually associated with some definite constitutional defect which may persist over a period of years without discovery finally resulting in severe impairment of the individual's general health, and abnormal mental states due to the disfiguring scars. This is especially true in young girls whose whole life is necessarily affected by their appearance.

On the other hand, it may be a mild disease, a more or less physiological condition. This type of Acne is the one we usually think of when the subject is referred too. It manifests itself as a mild Seborrhoea, over-activity of the oil glands, comedones, papules and occasional pustules coming on particularly at the age of pu-

berly. It varies in severity over a period of months or a few years and gradually clears completely leaving very little if any permanent scars. If all cases were of this type, there would be no need to be concerned about this condition. Unfortunately, this type is in the minority instead of the majority. The many cases of this more or less normal type, that clear up without treatment, have lead parents and the medical profession to neglect the treatment. No case of Acne, no matter how mild, should be considered in this light. Much can be done at the age of puberty not only to cure the mild types, but to prevent the development of the severe types. At the same time by a study of the cause and probable course of the early cases, we may be able to correct some important constitutional defect that may later seriously undermine the health of the individual. Acne, then should be studied and treated in practically all cases.

In order to arrive at some logical method of treatment, it is necessary to know something of the etiology of Acne. Even though it is a distinct disease entity, it is caused by so many different pathological conditions, that it is often helpful to consider it as a symptom rather than a definite disease. This attitude may help materially in the proper treatment. Acne should be studied with the following etiological possibilities in mind.

First; mild Acne Vulgaris is usually associated with normal adolescence; with normal menstruation and a slight aggravation of symptoms at twelve to fourteen years of age. It is characterized by excessive oily secretions; fine discrete papules and occasional pustules; all in healthly individuals. There is no suggestion of any severe underlying constitutional cause and it usually adjusts itself without treatment over



a period of a few months to two or three years. The treatment of this type of Acne is very simple. It is usually due to excessive oil, therefore the first indication of treatment is some restriction as to the very rich diets, particularly less candies, sugar and fried greasy foods. Locally the frequent use of soap and water followed by the application of astringent lotions. Never use greases of any kind on this type. You are dealing with an oily Seborrhoea that will be aggravated by any greasy ointment.

Second; Acne associated with menstrual disturbances. Occasionally we find severe Acne of many years duration definitely connected with the menstrual periods. They are usually worse just before and during the menstrual period. Appropriate glandular therapy and other measures to correct the menstrual pathology is usually followed by improvement of the Acne. Some of these cases are so obstinate that they finally come to operation, the causative factor may vary from simple misplacement, low grade chronic pelvic inflammation, to large ovarian tumors. Then there are cases that do not get well until after the first pregnancy.

Third: Gastro-intestinal. The intestinal flora as it varies from time to time in some individuals is followed by outbreaks of Acne. The diet may be all that is desired, constipation and other hygienic measures may be corrected and still there may persist a disturbance of the mysterious -ph- of the intestinal flora that will cause a chronic Acne. The correction of this pathology is often difficult. Attempts to change the intestinal flora by the ingestion of Bulgarian Milk, coarse bulky foods, and measures to increase the fermentation by the administration of yeast, may correct the situation. Yeast has been widely advertised as a cure all, and in those cases where auto-intoxication and constipation are important factors, the administration of yeast is helpful. Hazen on the other hand, has reported three cases of Acne definitely proven to be due to yeast. The point to be learned here is that the intestinal flora is so profoundly influenced by different nervous and emotional states that no one line of treatment can be successfully carried out in all cases. The digestive disturbances, particularly related to the secretion of HCL in the stomach often bears a true rela-

tion to Acne. This is seen more in Acne Rosacea which is practically always associated with a deficiency of HCL in the stomach. Acne Rosacea is an entirely different disease and seldom associated with true Acne Bulgaris. The former is closely associated with the emotional disturbances and it is a disease of middle life more than of adolescence.

Fourth; Foods play an important part in the production of Acne. In the young adolescent age, the Acne is often aggravated by excessive starchy and greasy foods, and our first thought in the treatment of Acne should be the correction of abnormal diets. A well balanced diet with plenty of vegetables and fruits and with the elimination of excessive starches and greasy foods, should be maintained in the treatment of all Acnes. The old idea that all skin eruptions are due to acid in the blood and the consequent elimination of fruits and such foods as tomatoes, etc., is fallacious. The question of food allergy or true sensitization in Acne plays a minor part. I rarely find any definite food reaction in Acne, either by the scratch or intra-dermal test. When definite food reactions are found the elimination of those foods does not seem to materially influence typical Acne. There are however, certain types of Acne that are due to specific foods. These cases persist into the twenties and even later and are characterized by recurrent attacks of small papules, seldom pustules, on a more or less dry skin. It is not the true Acne associated with Seborrhoea and never proceeds to large pustules and deep scar formation. White of Cleveland, found that this type of Acne which showed no specific food reactions by scratch or intra-dermal tests, but when placed on elimination diets, offending foods are found to be the direct cause of the eruption. To illustrate; I treated a young lady twenty-two years old, with x-ray and astringent lotions without improvement. Extensive food tests were done, all of which were negative. When placed on one of the elimination diets as advocated by Rowe, her face cleared completely. On the gradual addition of foods, the Acne eruption recurred when milk was given. This lady showed negative reactions to both the scratch and intra-dermal tests for milk. This is an illustration showing that certain types of

Acne are due to specific foods and do not show any specific reactions by scratch and intra-dermal tests.

Fifth; Sugar tolerance is considered an important etiological factor in Acne Vulgaris. Investigations have been made endeavoring to prove that a true relationship existed between low sugar tolerance with consequent increase in blood sugar and altered skin secretions in the production of Acne lesions. The theory being that the excessive sugar in the blood and secretions enhances the growth of local pyogenic organism. So far there are no reports in the literature indicating that Acne is associated with hyperglycemia. The clinical evidence however, is fairly conclusive that increased sugar aggravates Acne. The opinion has been expressed that this might be explained on the basis of inadequate laboratory methods for the proper determination of blood sugar.

Sixth; Vaccines have been used extensively in the treatment of Acne. I use vaccines very seldom. The expense of preparing an autogenous vaccine and the time it takes to give a course of treatment, together with the very uncertain results renders this type of treatment unsuitable for Acne. Certain types of Acne are supposed to be due to a lack of proper glutens in the blood. Intravenous administration of a vaccine such as Typhoid sometimes helps. Liver diet is also helpful in the same cases.

Seventh; Severe Acne with scar formation extending into the twenties and even into the thirties has for a long time been thought to be connected in some way with tuberculosis. Either as a tuberculide (that is a toxic eruption from some old foci of tubercular infection) or a real tuberculosis due to an attenuated form of the tubercle bacillus. One German author took cultures from Acne lesions injected them in successive generations of guinea-pigs, finally developing a virulent tuberculosis in the guinea-pigs, proving that certain types of Acne are tubercular in origin. Other Acne-like lesions of the face have recently been proven to be tuberculides. That is an eruption with tubercular structure but toxic in character and not due to the invasion of tubercular organism in the local lesion. With this information, certain types of

Acne are now being treated successfully with tuberculin.

In recent years the salt restricted diets of Gerson and Hermannsdorfer-Sauerbruch have been used successfully in the treatment of tuberculosis of the skin. The theory of this diet is that the excessive sodium in the skin secretions derived from table salt acts as an irritant to the capillaries in the skin. An electrolytic disturbance of the cation balance. In an effort to correct the cation balance an equilibrated salt consisting of excess of calcium, magnesium and potassium ions have been substituted for ordinary table salt-sodium chloride. Theoretically this corrects the normal mineral content of the skin. This diet has also been used successfully in the treatment of scar forming Acnes which seems to me, to be further proof that these Acnes are tubercular in origin.

Eighth; Foci of infection. Infected teeth, sinuses, tonsils, appendix, gall bladder and any other infected area is capable of causing Acne. These foci should be diligently searched for in any Acne of obscure origin. Only recently, I had a case of Acne, which after the tonsils were removed, the Acne flared up, became very acute followed by disappearance of the lesions without further treatment similar to the reactions seen in rheumatism and neuritis following removal of foci of infection.

The local treatment of Acne should follow after the study of the various etiological factors enumerated above. Astringent lotions, and soap and water should be used to combat the local oily Seborrhoea. Ointments should never be used except in very rare conditions where the skin is dry. X-ray undoubtedly is the best local remedy and when used properly by experienced hands is a safe and efficient remedy. Its improper use, however, is often followed by disastrous results. Ultra-Violet Light in combination with astringent lotion locally and cod liver oil internally, is helpful in certain cases. There are several forms of colloidal sulphur that are used in the treatment of Acne lesions which seem to be far superior to many of the ordinary astringent lotions. Other preparations may be given by mouth or intra-muscularly.

To conclude—Acne Vulgaris is a serious dis-



ease of constitutional origin requiring thorough study for its proper treatment.

### DISCUSSION

Dr. John M. Van de Erve, Charleston:

Dr. Allison has presented a masterly resume of a difficult treatment problem. Many of us have thrown up our hands when confronted with it.

There are just two points to which I wish to call your attention. One is the use of iodized salt. It seems to me that in this part of the country, where we apparently have sufficient iodine in our food products, the use of iodine in table salt may be an aggravating factor. Iodine has been proved in a few cases to be a causative factor. It seems to me, therefore, that in mild cases it might be well to advise the patient that the salt used in cooking and at table be free from iodine.

Usually only the severe cases of acne are seen by the dermatologist. Most cases are seen by the family physician. Therefore the ideal treatment of acne would be in the hands of the family physician, who can obtain the cooperation of the mother of the child and prevent the occurrence, later in life, of acne. It is comparatively easy to pick up the seborrheic skin that later eventuates in acne. If you find scurf or dandruff on the scalp with blackheads or comedones on the face, if you take the case at this stage and regulate the diet, give endocrine treatment if necessary, and use local treatment, secure good elimination, etc., it may prevent the occurrence of acne. Use soap and water to remove the oily secretion; then use an astringent lotion. *Lotio alba* is probably the simplest, beginning with quarter strength and working up to full strength. Many of these children may be spared a severe acne in later life, with consequent pitting and scarring.

Dr. Allison, closing the discussion:

I think Dr. Van de Erve's point about the iodine salts aggravating the Acne is very possible and glad that he mentioned this fact. The doctor evidently knows this subject very well and I am glad to welcome him to South Carolina as a Dermatologist.

### LATERAL SINUS THROMBOSIS

By

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This article has been prepared with the particular hope that the general practitioner might find it interesting and of value. Complete omission of theoretical discussion has been attempted. Briefness has been sought in keeping with accuracy and completeness.

It is the general practitioner who usually first

gets patients with discharging ears and, consequently, it is up to him quite often to decide the proper disposition of the cases. He is at once confronted with the question whether to advise palliative treatment, to advise consulting an otologist, or whether surgical interference is urgent. To those physicians practicing in rural areas this decision is often of considerable financial importance to the patient as a trip to a distant specialist is expensive. If the physician is familiar with the more frequent and more important usual complications of discharging ears he is in a better position to decide wisely.

With these facts in mind, in addition to discussing lateral sinus thrombosis, this paper includes, under 'differential diagnosis', the differentiation of this condition from meningitis and brain abscess secondary to ear infection.

Contradictory statements about this condition are fairly frequent in the literature. One text (1) states that the patient is nauseated, labors under vertigo, is very restless, —; similarly, a second (2) states that the condition usually gives rise to headache, vertigo, vomiting, slowing of the pulse, —. Contrarily, a third (3) teaches that, in these cases, headache means meningeal irritation, that vomiting and headache together are especially indicative of cerebral involvement (abscess), and that nystagmus is strong evidence of cerebellar involvement (abscess).

This paper represents a study of some outstanding works on ear, nose, and throat diseases (4) together with a series of eighteen case histories. The author was interested to note that the findings in these 18 records paralleled closely the description set forth by Jackson and Coates in their text 'The Nose, Throat, and Ear and Their Diseases'.

*Definition.*—Lateral sinus thrombosis and lateral sinus thrombophlebitis are terms used clinically more or less synonymously to indicate the presence of thrombosis, associated with inflammation, of the lateral sinus, the disease being most frequently a complication of infection in the middle ear, particularly mastoiditis, and characterized clinically by remittent fever, polymorphonuclear leukocytosis, and often a positive blood culture.

*Anatomy.*—The cranial venous sinuses consist of spaces lined with endothelial cells walled in by dura mater. They do not have valves. There are two lateral sinuses, a right and a left, known also as transverse sinuses. Each begins at the internal occipital protuberance (as the continuation of other sinuses), passes laterally and anteriorly across the internal surface of the occipital and parietal bones, turns inferiorly on the medial surface of the mastoid temporal bone, and then pursues a tortuous course inferiorly, medially, and anteriorly to the jugular foramen where it joins the jugular vein. The tortuous portion is termed the sigmoid (s-shaped) sinus. The sigmoid sinus particularly is in close relationship to the mastoid cells of the middle ear.

*Etiology.*—Thrombosis, associated with inflammation, in veins in general, or even in arteries, is not especially rare. Thromboangiitis obliterans, typhoid and typhus fever, scalp and facial wounds and infections, any generalized or localized infection, senility, marasmus, pregnancy, poor circulation from any cause (decompensated heart disease, for instance), and even normal anatomical structure (pressure of the right common iliac artery on the left common iliac vein) have all been accused as causes and probably each has at some time been guilty.

However, while true that any of the above factors may be etiologic, lateral sinus thrombosis is almost always secondary to middle ear disease.

Due to any one or more of the factors mentioned below the middle ear infection (mastoiditis or purulent otitis media or whatever the condition be) reaches the wall of the sinus and then causes the formation of a thrombus, probably as a result of injury to the endothelial cells lining the sinus.

The factors chiefly concerned in the spread of the infection to the sinus are (a) direct extension by bony necrosis, (b) retrograde thrombophlebitis of the small venules passing from the middle ear through the intervening bone to the sinus, (c) extension through the bloodstream as a result of bacteremia, (d) the carrying of the infection from the middle ear to the sinus by the surgeon at time of operation on the middle ear, (e) the virulence of the infecting organism, (f)

the resistance of the host, and (g) the improper performance of, or neglect to perform, myringotomy with the resulting accumulation of pus in the middle ear.

Sometimes, of course, when the infection reaches the wall of the sinus (phlebitis) the condition stops there: does not go on into the stage of thrombosis. This phlebitis is thought to be more serious than thrombosis in that the latter is looked upon as being, at least at times, protective. It is a clinically established fact that a larger portion of cases of phlebitis give a positive blood culture than do thrombosis (thrombophlebitis).

Once the sinus becomes involved the process may remain as a localized one; it may spread cranially and involve the rest of the lateral sinus, the sagittal sinus, the cavernous sinus or, indeed, any of the venous sinuses; or, it may spread inferiorly and involve the jugular vein.

*Symptomatology.*—Familiarity with the anatomy and etiology described above makes the symptomatology more easily understood.

Usually the case presents a history of an upper respiratory infection, especially nasopharyngitis, which was complicated by the development of otitis media and, most often, mastoiditis. Many of the cases give a history of a recent mastoid operation.

The onset is characteristically marked by a sudden, unexpected, rise of temperature to 103 or 104 degrees or more. There may or may not be a preceding chill. Then, after a variable time, usually a few hours, the temperature falls nearly to normal, to normal, or even to subnormal. The fall is most often accompanied by sweating. This cycle is repeated over and over, there being no specific time interval between the cycles. It is the usual septic, or 'spiking' temperature.

The sensorium remains clear except that the patient may mutter and mumble, especially during sleep. This is due to the fever. There is almost invariably no severe headache and, usually, none at all. When headache is present it is apt to be about the operative site. If severe it suggests the presence of a complication (see differential diagnosis). The patient does not look as ill as the temperature would lead one to expect; he may even insist he feels well enough to



be about. (This finding is particularly characteristic of bacteremia).

Blood culture is usually, but by no means always, negative.

Involvement of the jugular vein may result in damage to the three cranial nerves leaving the skull through the jugular foramen (ninth, tenth, and eleventh). This is known as Avelli's syndrome and is manifested by anesthesia of the pharynx and posterior third of the tongue, paralysis of the laryngeal muscles, and unusual prominence of the medial border of the scapula due to paresis of the trapezius muscle.

Papilledema may or may not be present; it is rarely marked.

It is a fact that obstructing the jugular veins by pressure (or otherwise) increases the spinal fluid pressure. Unilateral jugular (or lateral sinus) thrombosis of course obstructs the flow of blood through that jugular vein. If, therefore, pressure is made over the normal jugular vein during the manometric reading of spinal fluid pressure the pressure reading will rise if the opposite vein is obstructed by a thrombus. The reading returns to the previous level with the removal of the pressure over the unaffected jugular. This is known as the Ayer-Tobey sign and is of considerable importance especially if encountered early (before venous compensation has developed about the thrombosed jugular).

The spinal fluid is normal. There is usually no vomiting, no involvement of ocular nerves or muscles, no nystagmus, no vertigo, no signs of increased intracranial pressure, no symptoms of meningeal irritation, and no abnormal reflexes. As a matter of fact it is sometimes difficult to convince oneself that the patient has any such serious ailment as lateral sinus thrombosis.

The pulse rate rises and falls with the temperature variations.

The leukocyte count usually ranges between ten and twenty five thousand with polymorphonuclears predominating. Mild albuminuria is frequent. Glycosuria without hyperglycemia may be encountered.

*Diagnosis.*—The history of a middle ear infection, especially mastoiditis or a mastoidectomy, is most important. A longer or shorter time after the above infection or operation there occurs a sudden rise of temperature, usually

to 104 degrees or higher, which may have been preceded by a chill. After a few hours the temperature is found in the neighborhood of normal, the fall usually being accompanied by sweating. This cycle is repeated indefinitely.

This should at once stimulate a complete physical examination including blood, spinal fluid, urine, and eyes. A surprisingly negative result is characteristic. Usually the leukocytosis, possibly a positive blood culture, and the Ayer-Tobey sign are the extent of the positive findings.

On top of this, the patient looks well.

*Differential Diagnosis.*—The three conditions always demanding differentiation when either is present are (1) lateral sinus thrombosis, (2) meningitis, and (3) brain abscess.

For lateral sinus thrombosis see 'Diagnosis' above.

The usual frank case of 'otitic' meningitis presents a persistently high temperature, rapid pulse, agonizing headache, often accompanied by crying out, and a mixture of restlessness and sleeplessness, excitableness and irritableness. Delirium or coma are frequent. The pupils are often unequal and, rarely, there is papilledema, nystagmus, and dizziness. Suboccipital and spinal tenderness, Brudzinsky's and Kernig's signs, and stiff neck are usual. Any of the twelve cranial nerves, especially the third through the eighth, may become involved. The spinal fluid is cloudy, contains markedly increased cells, is under increased pressure, the sugar reduction is diminished, etc.

The symptoms of brain abscess may be divided roughly into those due to suppuration of brain tissue and those due to pressure on brain tissues.

Suppuration causes an initial chill which may be very mild and which usually does not recur; persistently recurrent, associated, headache and vomiting; a temperature varying from slightly above normal to normal or subnormal; more or less dizziness; 'indifferent' facies; and a rather rapid loss of weight.

Pressure causes bradycardia, stupor, slight papilledema. In addition, cerebral pressure (cerebral abscess) causes hemianopic indentation of the visual fields, aphasia, and contralateral

teral, slowly progressive, paralysis of the face, arm, and leg.

In contrast to the cerebral pressure symptoms above, cerebellar pressure (cerebellar abscess) produces spontaneous nystagmus to the affected side (towards the bad ear); homolateral paresis of face, arm, and leg; a variable leukocytosis (?).

X-ray examinations (encephalography, etc.) may be of aid in determining the presence of a brain abscess.

There are other conditions that may at times have to be differentiated. For instance, one might manifest a malarial attack by the usual chill, fever, sweating and fall of temperature to normal. Further, this might occur during the course of a chronically discharging ear. The occurrence of the chill, etc., only on alternate days, the presence of headache, finding malarial plasmodia in the blood, the usually sub-normal white blood count, and the response to quinine, plasmochin, or atabrine are sufficiently diagnostic. Even in malignant malaria there should be enough of the above indications present to be diagnostic.

Many other diseases might prove confusing in some cases. Application of the teaching of general medicine then has to be relied on, as with malaria above. However, there is one practically constant finding that helps one to detect a guilty ear and sinus as the cause of the chill and fever: in a discharging ear any intracranial complication is preceded by an exacerbation of the pain, which may have been entirely absent for some time. The exacerbation may be so mild as to almost escape notice but it is almost invariably contained in a careful history. Frequently, too, the aural discharge diminishes shortly before the onset of the complication (during the exacerbation).

*Complications.*—Meningitis and brain abscess are themselves frequent complications of lateral sinus thrombosis. Bacteremia is fairly frequent—may be even considered a sign. Infectious arthritis, especially of the sterno-clavicular articulation, occurs often. Abscess formation anywhere, particularly of the hip, knee, or shoulder, is at times encountered as is also pneumonia.

The following findings, most of which parallel

the above statements, were compiled by the author from the eighteen cases available to him.

One hundred per cent gave a history of middle ear infection. The length of time this had been present varied from four days to twenty years. The average was 3.08 months.

A mastoidectomy had been done shortly before in 94 per cent of the cases. And 17 per cent of the cases were detected at the operation on the mastoid. Of the post-mastoidectomy cases, the average number of days intervening between this operation and the detection of the sinus thrombosis (usually at a secondary operation) was 9.4 days. The maximum was 32 days.

As to the symptomatology of these eighteen cases each individual symptom is presented briefly below.

Chills: 50 per cent had one or more, all preceding the rise of temperature; in the other 50 per cent of the cases, while true that no chill was recorded, a slight chill could have been not noted.

Fever: 94 per cent had a striking temperature; 6 per cent had practically no fever.

Sweats: the fall in temperature was accompanied by sweating in 50 per cent of the cases; as with chills, in the other 50 per cent the most that can be concluded is that sweating was not mentioned.

Pulse: The pulse paralleled the temperature in 89 per cent of the cases; comparative bradycardia was present in 11 per cent.

Headache: 56 per cent of the cases complained of headache. This is at definite variance with what one would expect until the fact is mentioned that in none of these cases was headache severe and, when present, it was chiefly complained of as soreness or slight pain about the operative site; 44 per cent did not complain of headache at all.

Appearance: 80 per cent of the cases looked perfectly normal grossly (facies, etc.); 20 per cent were irritable, restless, sleepless, or easily excited. In some of these cases a combination of the above was present.

Sensorium: the mind was clear in 77 per cent of these cases; it was cloudy at times in 23 per cent. The cause of this in these cases is not clear—high fever? threatened complications?

Nervous system: 80 per cent were normal



throughout—pupils, cranial nerves, reflexes, etc.; 20 per cent were abnormal. The abnormal findings below are from this 20 per cent.

Pupils: 89 per cent of cases normal, 11 per cent abnormal.

Nystagmus: 89 per cent none, 11 per cent more or less.

Vertigo: 94 per cent of cases none, 6 per cent some.

Brudzinsky: 100 per cent of the cases showed negative.

Kernig: 94 per cent of cases negative, 6 per cent positive.

Stiff neck: 94 per cent of the cases showed none, 6 per cent some.

Papilledema: 86 per cent showed none; in 16 per cent it was present but mild.

Coma: this was absent in 100 per cent of the cases.

Delirium: this was absent in 94 per cent of the cases and present in 6 per cent.

No explanation is offered by the author for the findings above that one would not expect to find except to remind the reader that no pathological condition is cut, dried, and invariable (one may have typhoid fever almost without fever, for instance) and that some undetected complication might have been responsible.

Spinal fluid: There are records of spinal punctures on only nine of the cases. This was normal in 55% of the cases; abnormal in 45 per cent. The fluid was not especially abnormal (as in meningitis) in any of these cases. The cell count varied from 10 to 900. Otherwise the fluid was normal.

Blood count: the average was 13,500 leukocytes, 75 per cent polymorphs; the highest was 24,000 leukocytes, 93 per cent polymorphs; the low was 7,000 leukocytes, 73 per cent polymorphs.

Blood cultures: In 60 per cent of the cases this was positive, almost always for staphylococci or streptococci; 40 per cent of the cases were negative. Most cases were cultured several times.

Glycosuria: this was absent in 100 per cent of the cases, even after repeated tests.

The complications developed by these cases consisted of bacteremia (if considered a complication), peri-nephric abscess; osteomyelitis

of the temporal bone, bronchopneumonia, lobar pneumonia, brain abscess, cellulitis of the neck (at site of jugular ligation), and arthritis of the wrist, knee, and sterno-clavicular articulation.

In the only case in which the Ayer-Tobey sign was recorded as sought for it was positive.

As to the treatment of these cases, all were treated surgically (see below): 72 per cent recovered, 28 per cent died.

The average time that those who recovered remained in the hospital after operation for the thrombosis was 33 days; of those who died the average time between operation and death was 14 days, the maximum 27 days.

Three surgical procedures were followed, i.e., (1) jugular ligation, (2) jugular ligation with sinus drainage, and (3) removal of the clot with subsequent pressure to control any hemorrhage.

In addition, 13 of the patients had a total of 52 blood transfusions, an average of 4 each; five cases had no transfusion.

A few comments relative to these case histories are in order. In the first place the information obtained from them is only of comparative value: the series is too small to warrant definite conclusions. The information is of interest particularly as it compares favorably with or contradicts the findings in other series of cases.

Further, there were probably many cases of lateral sinus thrombosis in this hospital that recovered without operation, or even without treatment other than bed rest—some possibly not even recognized. It is evident that surgical interference is not, from this paper, demanded by a diagnosis of lateral sinus thrombosis.

Two definite conclusions, however, do seem in order. First, cases of lateral sinus thrombosis may present a variable clinical picture. Second, modern surgical interference combined with multiple transfusions results in a preponderance of cures.

*Treatment.*—This question will not be discussed as it is of interest almost wholly to the specialist, to whom these cases should be sent.

*Summary.*—Lateral sinus thrombosis is usually secondary to disease of the middle ear. The literature in general is rather confusing as to the usual symptomatology of the condition. This

should not be, particularly as the usual cases present consistently a set group of findings. The differential diagnosis is rather easy and clear cut.

*Conclusion.*—The general practitioner should familiarize himself with this condition. It is fairly frequent and, usually, amenable to proper treatment. The treatment should be left to the otologist.

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### SOME PHYSIOLOGICAL FACTORS IN THE PRODUCTION OF THE ALLERGIC STATE, OR WHY ASTHMA

By

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Consideration of asthma, not as a disease entity but, as a symptom(1) of a systemic disturbance of fundamental biological perversion with diverse manifestations, materially facilitates its management. This disturbance, we term the allergic state, following the term allergy, introduced by Von Pirquet(2), which is defined as altered reactivity. The two important implications immediately appearing are, first, a reacting substance must attain contact with the reacting organism, the human body and, secondly, that organism must be so modified in one or several ways to produce a reaction out of all proportion to that occurring after contact of the normal or non allergic individual with this same substance. This latter will serve also as a satisfactory working definition of the hypersusceptible state.

A complete understanding of this modification of the individual would serve to make the control of allergic disease easy and tremendously enhance our knowledge of immunity. Of

this much we are fairly certain, allergy in the human and its counterpart anaphylaxis in the animal are part and parcel of the process of immunity and these two untoward phenomena are "accidents in the course of defense"(3).

If a guinea pig receives an injection of horse serum followed by daily injections for the next four or five days nothing happens. However, if an interval of ten days is allowed to elapse after the first injection before a second is given, anaphylaxis, usually fatal will occur. The dominant pathological finding will be an inflated condition of the lungs due to a contraction "peripheral in origin of the smooth muscles of the bronchioles"(3). Other changes to be noted are "a fall in blood pressure, a lowered coagulability of the blood and a leucopenia"(3).

There is convincing evidence to show that the first effect of the foreign substance or antigen (horse serum) is to cause the elaboration of a substance, antibody, within the tissue cells of the animal. Antibody production increases until at the end of ten days, it is sufficient in amount, both in tissue cells and serum, to combine at the former site with the antigen, reintroduced by the second injection of horse serum, to produce the train of physiological alterations resulting in the animal's death.

At this juncture I wish briefly to mention two fundamental experiments which tend to confirm the presence of antibody both in tissue cells and serum. In the Dale experiment(4), a guinea pig is first sensitized to a specific antigen, the animal is killed, the uterus is perfused thoroughly to remove all traces of blood and serum, and is then suspended in Ringer's solution with customary provision being made to record contractions. Addition of the specific antigen causes contractions of the uterus indicating that antibody was present in the tissue cells themselves. In the Prausnitz-Kustner reaction (5) the serum of a sensitive person is introduced into the skin of a normal individual. After a matter of minutes, introduction into this area of the specific substance to which the first person was sensitive causes a typically positive reaction indicating that antibodies were transferred in the serum. However, even though antibody is present both in tissues and blood serum the weight of evidence indicates



that all important antigen-antibody reaction takes place within the sensitized cells.

Meltzer in 1910(6) pointed out similarities in the lungs of human asthmatics and of guinea pigs dead of anaphylactic shock, with the result that for a time the two processes were thought identical but it has since been learned that in the human there are numerous discrepancies, with the result that the hypersensitive state has been found to be far broader. Such a state can be produced in a variety of ways in a manner excluding a simple antigen-antibody reaction with the result the term anaphylaxis is restricted by many investigators to "antigen-antibody reactions as seen in experimental animals" and allergy is used broadly in the human to include "anaphylaxis and other altered reactions such as serum disease and drug idiosyncrasies"(3).

The end result however appears due to the same fundamental mechanism, whether asthma, hay fever, urticaria or some other manifestation occurs. Most important of all, there is an alteration of smooth muscle physiology and secondly there is a disturbance in the capillaries. It seems likely that all the various symptoms can be explained by these two fundamental changes.

As we all know, the symptom, asthma, consists essentially of difficulty in forcing the air out of the lungs due to spasm of the smooth muscle surrounding the bronchioles, particularly the terminal or respiratory bronchioles. There is usually an associated excessive secretion of mucus by the bronchial glands, which may be more pronounced after the attack has begun to subside, probably due to the fact that the mucous glands lie outside the muscle layer, which having been in spasm, constricted their ducts. It appears furthermore, that these phenomena are due to vagal stimulation at the nerve endings in the bronchioles and glands.

This event occurs in one of two ways, by reflex vagal nerve stimulation or by direct stimulation of the vagal endings by some substance present in the blood of that immediate area. As to the origin of this substance there is rather general agreement, namely that in some unknown way it results from the antigen-antibody union above described. As to its nature there is less concurrence of opinion. Of the various theories, it seems to me, the belief that the sub-

stance is closely related to or identical with histamine, carries most justification. I shall discuss the histamine theory in more detail later.

Consideration of reflex vagal stimulation necessitates a brief description of the asthmagenic area of the nose. "This area begins with the lower margin of the middle turbinal and includes all of the upper air passage extending from this margin to the cribriform plate both the lateral and septal surfaces of the nose being included. It is bounded in front by the anterior end of the middle turbinal and extends posteriorly to the sphenoid body and may include the sphenoid cavity. Laterally it extends from the septum to the lateral plate of the ethmoid."(3)

Stimulation of this area mechanically or otherwise leads to bronchospasm through the nasopulmonary reflex inasmuch as this area is supplied by the ophthalmic and maxillary divisions of the fifth nerve whose descending root ends about the cells of the nucleus ambiguus which represents the motor root of the vagus and glossopharyngeal nerves.

This leads to an important point in the treatment of asthma. A very careful distinction must be made between primary inflammatory conditions of the nose and its accessory structures and secondary allergic changes to clarify the indications for operative measures. In respiratory allergy as a whole, changes occur in the mucous membrane of the nose and accessory sinuses as well as the lungs, which though often considered due to primary inflammatory processes, are actually merely secondary manifestations of the underlying allergic disease. To inspection, turbinates may appear to be greatly swollen and sinuses cloudy to transillumination and x-ray with complete disappearances of these phenomena when the asthmatic attack ceases. In such conditions their nature will be clear if one remembers that such swollen mucous membranes are moist, translucent, edematous and pale. Operation in such a case, will obviously not be of help and will so impair the mucous membrane to render it more susceptible to subsequent onslaught by the exciting agent. However, such frank mechanical irritants as ethmoidal polyps and high septal spurs are treated

operatively with justification and the patient is improved.

The greater proportion of cases probably results from direct stimulation of the vagal nerve endings in the lungs by a chemical substance, probably as indicated above, closely related to histamine.

Injection of histamine intracutaneously causes a large wheal and a surrounding area of erythema due to an increase in capillary permeability with the passage of fluid into the tissues, and capillary dilatation. It is probable that relaxation of the arterioles occurs also. Systemically it causes a fall in blood pressure and bronchial constriction with associated subjective symptoms of faintness, giddiness and difficult respiration. Histidine, an amino-acid present in all tissue cells, especially those of various mucous membranes, is easily converted into histamine by the removal of carbon dioxide atom from the molecule of the former. It seems probable that a substance, the "H" substance of Lewis (7), with identical actions as histamine is produced in the various allergic conditions and histidine is one possible source.

There is a difference of opinion as to the susceptibility of allergic and non allergic people to histamine. Observations made in the course of gastric analyses in which histamine is employed would indicate a difference in the reactions of various people but they do not necessarily fall into clear cut allergic and non allergic groups. In general, it seems that histamine, if formed in the course of allergic disease, exerts its effect predominantly on those tissues in the immediate vicinity of its site of formation and that the antigen-antibody reaction in asthma takes place within the lung itself.

So far we have been concerned with some of the underlying mechanisms in the production of allergic symptoms, especially, asthma. Of more clinical interest is a consideration of why people have asthma. There are three fundamental requirements. A person first of all must have the capacity to become sensitized, secondly, he must become sensitized by contact with a sensitizing agent, and thirdly, after the induction of this state further contact with the sensitizing agent is necessary for the production of symptoms.

This capacity to become sensitized, we call, the allergic background, the soil in which the seeds of allergic diseases must be sown to thrive. And chiefly in this respect is allergy in the human different from anaphylaxis in the guinea pig. This species can be sensitized to horse serum in essentially 100 per cent of cases while only about 1 per cent of humans have the capacity to become sensitized at all to any substance (1).

Without doubt the factor producing this background, of far more importance than all others, is heredity. In Bray's series of 200 cases of asthma in children there was a unilateral family history of allergy that is either in the mother's or father's side of the family, in 51.5 per cent of cases and a bilateral history, in 17 per cent of cases. In only 31.5 per cent of cases was there no positive family history. Even more striking was the fact that of the unilateral cases transmission of 64 per cent occurred through the mother's side while only 36 per cent through the father's (3). Just what is transmitted is difficult to say at present but essentially it is the tendency to hypersensitiveness. Transmission through the father obviously must take place through the germ plasm. Though active sensitization of the fetus in utero may occasionally occur (8) and passive sensitization, rarely, by the transmission through the placenta of antibodies preformed in the mother, it is likely in the vast majority of cases that transmission through the mother occurs essentially in the same manner as in the father.

Given the allergic background contact with a specific sensitizing agent must occur. This factor follows the rules of common sense. Poultry raisers become sensitized to feathers, stock raisers and horsemen to horse dander and other animal emanations, horticulturists to plant pollens, babies to milk and egg. Such an associative list could be continued indefinitely. More intriguing is the fact that, following routine skin tests, frank sensitivities, though probably not important in the production of symptoms at the time, are found, yet after careful questioning only a casual opportunity, or perhaps none at all, for contact with the sensitizing agent seems to have occurred. This would indicate that though prolonged exposure to a given agent is



more likely to produce specific sensitivity to it the same situation may be accomplished by the briefest contact. An important corollary immediately appears with reference to the treatment of asthma, namely, the skin tests must be closely correlated with the environmental history and our greatest energies directed toward the removal of, and the desensitization to, those substances in the patient's sensitivity pattern where contact is most likely.

The patient who presents himself to us for treatment has already fulfilled all three primary qualifications and our problem resolves itself in to the identification of the sensitivity, and preferably if at all possible, the prevention of further contact and general treatment of the patient to restore the normal equilibrium of his smooth muscle and bronchial glands. These two goals failing achievement, we are then forced to fall back on an effort to neutralize specifically the existing sensitivity. This process we term desensitization.

However, time does not permit discussion of sensitivity tests, desensitization procedures, and the technique of treatment in general. I have merely tried to present what to me has been a helpful concept in trying to understand a difficult disease, the allergic state, and its most distressing symptom, asthma.

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#### AN OUTLINE OF THE HISTORY OF ORTHOPEDIC SURGERY

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To write a complete history of the development of orthopedic surgery would be a tremendous task. To sketch briefly this development

in a limited space of time is difficult, and many important phases must necessarily be omitted. It is with the hope that some of the more important developments can be traced that this paper is attempted.

The origin of bone and joint surgery is almost as antique as our knowledge of the human race. Hundreds of skeletons which have been unearthed from the burial grounds of the prehistoric men of Europe, Asia, and Northern Africa show all grades of bone pathology and injury. For example, there is a large osteochondroma on the femur of the original Java Man, *Pithecanthropus erectus*. In the original Neanderthal skeleton the ulna shows a fracture which has united in good position. There was, of course, no attempt at bone surgery as we know it today. When there was an acute infection of bone such as osteomyelitis, the disease either ran a self-limited course or ended fatally. Paleolithic man probably acted as other high-grade animals and treated his fractures instinctively. By judicious rest with possibly some form of support, followed by cautious return to motion, no doubt some very excellent results were accomplished.

At some time during the course of neolithic development knives and saws were invented and the first evidence of amputated stumps were found. These operations were formidable but not necessarily fatal. In the caves of La Tene, in France, many illustrations of figures with amputated fingers have been found. There being no apparent pathological reason, it is thought by some that the operation was done in obedience to some religious custom.

Another commonly practiced surgical procedure was trephination. It is apparently the earliest of all bone operations and was universally practiced. Trephined skulls have been found not only in Old World deposits but also in the graves of pre-Columbian America. Sharpened stones were used to make the opening in the bone, and even in spite of absolute ignorance of asepsis, many of the patients recovered. It has been generally believed that these frequently done operations were performed at the insistence of the medicine man or witch-doctor to give vent to the evil spirits which were disturbing the patient. However, Hrd-

licka, the eminent anthropologist of the Smithsonian Institute, has recently demonstrated that in many instances trepanation may have been done in cases of head injuries with fracture of the skull to relieve the development of paralysis and coma.

A study of the decorative pottery used by our early progenitors throws valuable light on man's further progress in civilization. Many of the larger urns and mural decorations carry illustrations of the types of people in the community. Hunchbacks, dwarfs and other forms of cripples are represented.

Following the introduction of the art of embalming in the era of pre-dynastic Egypt much more interesting material was brought to light. G. Elliot Smith and his co-workers in archeology in the Nubian Desert uncovered mummies of the Fifth Dynasty (2750-2626 B.C.). Some of these bodies had fractured limbs still bound in splints which were evidently very ingenious and effective. It is doubtful whether tuberculosis existed in Early Egypt, but Ruffer describes an unquestionable case of Potts disease with psoas abscess in a mummy of the twenty first dynasty (1000 years B.C.). However, the various forms of arthritis were extremely common, and the spa, which is one of the oldest of all therapeutic institutions, thrived on the treatment of these chronic joint cases. There is very little evidence of any attempt being made to treat the congenitally deformed since the virtue of society during the incumbency of the Pharaohs called for extermination of these unfortunates.

Early Egyptian methods are important chiefly in that they formed the matrix from which, through Minoan and Aegean channels, the remarkable cultural achievements of Greece later developed. Grecian surgery began just preceding the age in which Homer lived. The opportunities which was afforded gave tremendous impetus to medical and surgical development. The Greco-Roman temples became centers of medical service, and, although the practice was primarily religious, it used the best medical science at its disposal. The great establishments at Cos and Epidauros cared for the crippled, deformed and disabled, and became the

patterns after which Christianity in later centuries modelled its hospitals.

The earliest truly scientific treatise on medicine was that remarkable series of volumes ascribed to the physician for whom they were named and known as the Corpus Hippocrates. The exact dates of the existence of Hippocrates are not known, but it has been determined that these most important of all Greek texts appeared at sometime between the 4th and 1st centuries B.C. Some of his books are especially applicable to orthopedic surgery and should be read by everyone interested in this specialty. Almost all of the basic principles underlying the practice of orthopedics can be found in his books, "On Fractures," "On the Articulations," and "The Surgery." Much of the material which has been presented as modern and original in comparatively recent years was forgotten by the world for centuries and can be found in the Corpus Hippocrates.

Even though it was the custom among early Greeks to destroy infants with congenital defects and deformities, Hippocrates describes spinal curvature, club foot and congenital dislocation of the hip. He recommended gymnastic exercises, heat and massage, bandaging and splinting, and the use of machines, but it is not recorded that he had recourse to surgery. Artificial limbs, braces, splints and club foot corrective shoes were used, but probably the most famous apparatus devised by Hippocrates was his Scammion. This was an ingenious but crude type of fracture table with windlasses on which traction could be applied for the reduction of fractures and dislocations. Its use continued for centuries.

In spite of the fact that many creditable methods were in use at this time, certain interesting and curious practices were maintained by isolated nomadic tribes. A few of their methods warrant reciting. A patient with a dislocated hip was kept in a darkened room for three full days. He was sweated by the constant burning of fires. No food was allowed but the sweating was enhanced by copious drafts of warm rice water. During this same time a bullock or buffalo was confined and fed only on chopped straw and salt, no water being allowed. At the end of the three-day period the patient was placed



astride the animal and his ankles securely fastened together with cords under its abdomen. The animal was then led to water and allowed to "drink until its belly swells to about double that of its former size." This distention either "brings the wandering bone back to its socket or produces more serious results likely to render the victim a helpless cripple for life."

To reduce a dislocated shoulder an empty goatskin was placed between the flexed elbow and chest, the corresponding hand being securely fastened to the opposite shoulder. The goatskin was now slowly filled with water until it weighed 100 pounds or more. The weight and increase in size of the bag overcame resistance and either "betterment or farther injury resulted."

A dislocated ankle was treated by burying the foot in a hole dug in the ground. After being firmly fixed by packing earth securely about it the limb was then forcibly pulled outward "with a fair chance of the joint returning to its normal position."

Some of the Hippocratic methods may be briefly mentioned as follows: The principle of continued traction to overcome muscular pull in fractures of the long bones was well understood. Judicious padding of splints to prevent pressure sores over bony prominences was taught. Fractures of the clavicle were known to heal readily, and tardy or nonunion was recognized in other locations. They did not comprehend the circulation of the blood as described by Harvey 1500 years later, but they knew that a constricting bandage produced venous stasis and favorably influenced delayed union. Bier, within our own memory, has so popularized this principle that it is widely known as his method of venous stasis, when in reality its origin dates back to the author of "On Fractures." Their methods of reducing shoulder dislocation by traction and counter traction in the axilla are classical. Recurrent shoulder dislocations were treated by application of the actual cautery to the inferior capsule, deep in the axilla. The scar tissue contraction following cauterization accomplished the same results as some of our modern operations. Hip dislocations were reduced by straight manual traction, except extreme cases which were either hung by their

legs from an overhead beam or treated in the famous Scamnus Hippocrates. Overcorrection of club foot was known to be essential. Spinal deformities were treated with extension on a flat surface and prolonged recumbency on a hard mattress. Considerable force was frequently used in attempts to correct kyphosis, though it was commonly known to be ineffective. They understood the late kyphosis which develops after fractures of the spine. Along with these active measures, the value of proper diet and hygienic measures were stressed.

Aside from the many splendid methods of fracture treatment it is surprising to note the very modern conception of motion and rest which guided the Hippocratic surgeons. These methods, after the time of Galen, were mostly forgotten by the world until the 18th century. A sentence from the book, "On Surgery," concerning fractures in general deserves quotation: "It should be kept in mind that exercise strengthens and inactivity wastes!" That one simple statement contains all of the fundamentals developed in our elaborate physiological knowledge of the atrophy of disuse. Early mobilization of fractures was one of the many principles recognized by the ancients, ignored for ages and even today by many surgeons it is frequently not understood. In general, it can be said that Hippocratic orthopedics contained within itself practically all of the elements of modern technic, other than the operative.

The history of orthopedic surgery from the time of Hippocrates until the eleventh century can be rapidly summarized. Except for a few notable characters, it was practically barren. Celsus advocated gymnastics, active and passive motion, soon after the beginning of the Christian Era. Ephesius described the deformities later designated as "rickets" by Glisson. Galen, who lived from 131-120 A.D., was a truly remarkable Roman physician who made many valuable contributions to anatomy, physiology, embryology, and neuroanatomy. He coined the words "lordosis," "kyphosis," and "scoliosis." He knew that blood was contained in the arteries and veins. He understood and used the term "anastomosis of the capillaries," and all but preceeded Harvey in his discovery of the circulation. Aurelianus, in the second cen-

tury, described the treatment of paralysis, and Antyllus, one hundred years later, advocated tenotomy for ankylosed joints. Paul of Aegina (625-690 A.D.) wrote extensively and left a profound influence for succeeding centuries. He was much nearer to Hippocrates in method and attitude than any of his contemporaries. Following Paul came the Arabians and for several centuries southern Europe was dominated by Mohammedan culture. The Mohammedans were antipathetic to the cutting of the human body, alive or dead, and this fact militated against the development of surgery in the Middle Ages. Rhazes (861-932), Haly ben Abbas (994), Avicenna (980-1037), and Isaac Judaeus (885-955) were the outstanding figures of this period, but they were physicians rather than surgeons.

The cultural complexion began to change in the 11th century. The university at Salerno was established. Its faculty was composed of the best available talent, and students came from all parts of Europe. Soon after this, the great teaching centers in Paris, Bologna, Oxford, Montpellier, Padua and Naples were founded.

From this period on, it would be impossible to mention all of the various outstanding men of surgery. The names of Saliceto, Guy de Chauliac, Leonardo da Vinci, Ambroise Pare, Fabrizio and Coiter will always be famous. Their work was aided by the eminent anatomists of that period—Versolima, Fallopius, Servitus, and Eustachius. There was considerable conflict with the barber-surgeons, but in addition to various types of corsets, braces, poultices, salves, etc., the surgeons used many cutting operations. Nerve, muscle, and bone operations were done, and the use of ligature was introduced to control hemorrhage in amputations.

The study of anatomy was carried on intensively and great strides were made in orthopedic understanding and practices. Ambroise Pare has frequently been given credit for being the father of orthopedics, yet the term "Orthopedia" was not invented until nearly two hundred years after his time. Nicholas Andre, professor of medicine at the University of Paris, gave the title "Orthopedia" to a treatise which he published in 1741. He synthesized the term from the Greek roots *orthos* (straight) and *pais*

(child) to express his belief that the idiopathic deformities of adolescence and adult life were due to an imbalance of the muscular system in childhood. However, the real founder of orthopedic practice, that is, "the mechanical straightening of the crooked child," appears to be Venel, who in 1780 established in Switzerland the first orthopedic institute in the world. During the next two centuries tremendous advances were made in all surgical procedures, but cutting operations were entirely too hazardous to permit of their general usage.

The really revolutionary period which has led to modern surgical and orthopedic practices occurred within approximately the past half-century. The wonderful achievements in surgery which are now being universally and unhesitatingly practiced can be attributed almost entirely to four men whose names in medical history will forever be immortal—Virchow, Pasteur, Lister, and Roentgen. These men made the technic of the work possible, but Crawford Long, in our own Southland, first used ether anaesthesia which gave satisfaction, safety, and "comfort of soul" to the patient undergoing the operative procedure. Although Long was the first to use ether in operation, credit for its clinical use has been attributed by some to another man. Dr. Morten, a dentist who practiced in Boston, popularized the method.

Prior to this period, there were few men who confined their work entirely to orthopedics, and it can be said without disrespect that they were generally speaking a group of dignified "harness makers." The correction of crippling deformities and diseases was a prolonged, tedious and frequently painful procedure. Corrective apparatus was the vogue and these appliances were worn for months or years by the poor patients. The nearer to being a mechanical genius was an orthopedist, the greater was his reputation and practice. Frequently all of the operative work was done by the general surgeon and the orthopedist was called upon to devise an apparatus much as the modern brace maker is used by the orthopedist of today. How conditions have changed with the advent of Listerism and asepsis!

No sketch of the development of orthopedic



surgery would be complete without the inclusion of its most prominent figure of the past century—Sir Robert Jones of England. This world famous character was the apprentice and nephew of the great Hugh Owen Thomas, who, in turn, with his four brothers, had assisted his eminent father in orthopedic surgery. "Our profession," says Moynihan, "has rarely produced a mind so original and independent as that of Thomas's." He knew little of pathology, but of the changed appearance and function of morbid bones and joints and of the means other than open operation to be used to aid nature in its effort toward restoration, no man ever knew so much. He was a veritable mechanical genius and enjoyed a tremendous practice. Orthopedic surgery was, to Owen Thomas, sometimes a matter of enforcing rest, sometimes of fitting corrective or supportive appliances, sometimes of manipulations, and sometimes a wise combination of the three. All of this knowledge and experience was inherited by Sir Robert Jones, to which he added the practice of surgical methods which Lister had made possible. As an operator and as originator of surgical procedures for the care of orthopedic cases, he was among the greatest who have ever lived. Shortly after the beginning of the World War it became evident that in order to care for the wounded and crippled soldiers there would be a great demand for men trained in orthopedics. At the head of the orthopedic office of the war department was appointed Sir Robert Jones. Under his guide, counsel, and example a large number of skilled workers were soon taught to assume these important positions. The genius of Owen Thomas and the skill of Sir Robert Jones found their highest expression in the care of our wounded. The methods of these two now became common knowledge and the heritage the world over for all of those who sought to enjoy them. Moynihan says, "In the practice of Orthopedic surgery the spirit of Sir Robert Jones will live forever."

Following the tremendous experience which the war afforded, orthopedic surgery rightfully assumed its position as one of our most important specialties. Even after the advent of asepsis many surgeons were reluctant to invade osseous and joint structures, but war time ex-

perience had proven that these operations were not only possible but that they could be done with safety. Within the past twenty to forty years perhaps more has been accomplished for orthopedics than in all of its previous history. It has found its proper place in the medical curriculum and special postgraduate courses are being taught. Various institutions have been erected throughout the world for the especial study and care of orthopedic cases. Volumes of research work have been published and more is known about the chemical, physiological and pathological changes which take place in diseases, injuries, and abnormalities of the osseous system than ever before. Guinea-pig inoculation tests, biopsy tests, serological, histological and bacteriological studies have become more valuable. The x-ray not only makes the diagnosis of many bone diseases possible but it is indispensable in the treatment of fractures and certain other osseous lesions. The public is aware of this fact now and frequently the roengenologist is the first to be consulted by the patient. Electrodiagnostic apparatus have been devised and the moving picture is freely used for teaching purposes and for demonstrations. Various measures for physiotherapy, hydrotherapy, chemotherapy, phototherapy and electrotherapy have come into use. Heliotherapy in the care of tuberculous bones and joints has reached a high degree of perfection as in the Rollier Institute at Leysin, Switzerland. However, the surgical fusion of these joints by intra and extra articular fixation has become more and more popular. The credit for introducing bone graft surgery rightfully goes to Dr. Fred Albee of this country. With modern methods of aseptic technic and preparation before operation these cases may be undertaken with impunity. Months or years of recumbency in the treatment of tuberculous joints have been shortened by fusion operations. Tuberculosis of the spine is treated with the tibial bone graft of Albee or the Hibbs type of multiple osteogenic bone chip operation. Various modifications of these two procedures have been introduced. Bone grafts may be inlay, onlay, intramedullary, or osteoperiosteal. Pegging and mortising procedures are numerous and as ingenious as the cabinet making skill of the individual surgeon

permits. Someone has facetiously remarked that there are two kinds of surgeons—carpenters and plumbers. The orthopedist, as a carpenter-surgeon, is aided greatly by the many new instruments and tools which have been developed. There are various chisels, gauges, hooks, screws, plates, clamps, pins, etc., but the electric motor with its sterilizable shell and various attachments is of particular importance in doing good bone surgery. The use of various metallic appliances for the internal fixation of fractures has largely been discarded. Stainless steel for removable fixation or for temporary traction appliances has recently been introduced and is used with great satisfaction. Boiled beef bone, ivory and celluloid pegs and plates are available, but are not considered as satisfactory as autogenous bone grafts. The treatment of scoliosis has improved greatly with newer corrective measures and with spinal fusion. Great progress has been made in relieving the sufferers of infantile paralysis. Tendon transplantations and joint stabilizing operations are fairly well standardized. Osteotomies to correct deformities are unhesitatingly done and bones may be either lengthened or shortened by operation. Spastic paralysis can be benefitted by appropriate nerve and tendon operations. Royle and Hunter in 1924 introduced the operation of sympathetic ganglionectomy for spastic cases. The increase in temperature of the operated extremity provoked a great deal of study of this new operative procedure. Now the operation is used rather extensively for the relief of many circulatory deficiency conditions with which the orthopedist comes in contact. The treatment of congenital dislocation of the hip has greatly improved with the advent of open reductions. Various hip joint reconstruction operations are now fearlessly performed with happy outcomes. Some of our medical forefathers would have been horror stricken at the thought of such procedures. Many other types of extensive bone and joint operations are being performed without hesitancy. Arthroplasty of joints is a standardized procedure. There is a considerable amount of tendon, nerve, and skin surgery which comes within the domain of orthopedics. Congenital deformities and those resulting from burns or other in-

juries can be greatly benefitted by modern methods. Orthopedic apparatus has been greatly simplified and braces are made out of a much lighter material. Splints are made of light aluminum which is permeable to x-rays. Traumatic surgery has made such great demands on the orthopedist that now fractures are referred to him directly and many insurance companies and large corporations make provision for his services to their injured. With the ever increasing accidents as the result of modern high speed machinery it is likely that soon traumatic surgery will be a distinct specialty. The handling of fracture cases has been made much easier with modern fracture tables, portable x-rays, improved plaster of paris technic and the new machines for reducing and maintaining the fractured part in position. Whereas, prior to the days of Lister, most of the patients with compound fractures died. Now it is rarely that one becomes infected and very seldom that amputation is necessary.

Many other examples could be cited to illustrate the tremendous strides orthopedic surgery has made in the past half-century. A few years ago it was practiced only in the large cities. Now both coasts and the interior of our country are richly supplied with splendid clinics, many of which have a well-deserved international reputation. Orthopedic surgery has developed from a very humble beginning and no longer is confined merely to the "straightening of the crooked child." Campbell, in his recent textbook, describes it as "that branch of general surgery which deals with diseases and injuries of the bones, joints, muscles, fascias, and nervous system which may impair function or cause deformity at any age of life." Every student preparing for the practice of orthopedics should realize the responsibilities of this specialty. He should be thoroughly versed in the fundamentals of medicine and, in addition, he should be well grounded through knowledge and practice of the basic principles of general surgery. The work is difficult and exacting but the field has only recently been opened and the opportunities for development and self-expression are numerous. Let us hope that with the passing of years orthopedic men will continue their harmonious relationship with medicine and sur-



gery in general and that they will justify the faith and confidence that has been placed in them.

*Note:* In preparing this paper it was necessary to copy certain data from the works of others. To these authors I wish gratefully to give due credit in the appended bibliography.

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### MANAGEMENT OF CROSSED EYES IN CHILDREN

By

RUSKIN G. ANDERSON, M.D.,  
Spartanburg, S. C.

Recent progress in the correction of crossed eyes has modernized our knowledge of the management of strabismus cases. Methods were offered for the correction of crossed eyes at least two hundred years ago, but very little progress had been made before fifty years ago. During the last ten years, the ophthalmologist has seen this type of work advance steadily. The experiences of our elders have shown their mistakes in correcting squints and have given us a better understanding of the causes of squints and the methods of correcting them.

Many parents seek the advice of physicians because their children have crossed eyes. Generally the parents consult the family doctor or the pediatrician first and for this reason they should know what can be done for crossed eyes

and how to advise the parents. Frequently parents have refused the advice of glasses and treatment of the child's eyes in early life but come to the doctor again after the child starts to school. The teacher sends a note to the parents saying the child has crossed eyes or cannot see the blackboard and that they should see a physician. Too often the child with crossed eyes is shunned by the other children, is teased because of his defect and is even regarded as a mental cripple. One can now see how such a child easily gets behind in his studies. When the child starts to complain, the parents are ready to cooperate and they want the child to have a refraction and want him started on exercise. Every child is entitled to a correction of his refractive error and he is handicapped immediately when a needed correction is refused by the parents. Children should be refracted under a complete cycloplegia with atropine as the success of the refraction depends entirely upon the oculist. Subjective examination is valueless in young children.

Glasses should be worn constantly, when the error of refraction is found to be such that glasses are needed for its correction. The time to begin is early and we often put glasses on infants under one year of age and they wear them without any serious difficulty. Of course, binocular vision is not present at birth but is usually noticed about the fourth week of life. After this time, if a squint develops, we should examine the macula with the aid of the ophthalmoscope to be certain there is no pathology present. Every child should have binocular vision and when this is not present, the squinting eye must be stimulated in some way so as to restore binocular vision. Orthoptic training has been advised by a great number of oculists but its benefits have undoubtedly been exaggerated. Orthoptic training is of greater value when instituted before the age of six years, after this time the results are doubtful. In my experience, I find that the poor vision in a squinting eye can be greatly improved by wearing a patch over the fixing eye at regular intervals for several weeks and thus make him use the squinting eye. This is an old method and very simple and probably gives as good results as any. The best results are seen in squinting eyes with a

vision of at least 20/60 and there are the cases considered likely to respond to any treatment.

Loss of binocular vision and the power of fusion is due to an imperfect brain control. It is impossible to develop fusion in some children and an early operation is indicated here in order to aid the eyes in developing fusion before a definite squint has occurred. When the diagnosis of true alternating strabismus is made, the child should have an immediate operation as glasses seldom correct this condition. In an actual squint with a normal or practically normal refractive error, it would be useless to prescribe glasses and an operation should be advised for its correction. If an actual squint is not corrected early, the squinting eye rapidly loses its visual acuity and amblyopia exanopsia is developed. One is not justified in stating any definite age of the child is the time for operation. We have operated many cases as young as two and a half to three years of age and obtained excellent results.

We must be sure that the squint is not due to paralysis of nerve or muscle. If it is a paralytic case, we try to determine its cause and treat that. Operative correction is not advised until we are sure the paralysis will not recover. Some of the more common causes of paralytic squints are syphilis, birth injuries and intracranial complications.

Frequently an intermittent type of squint is seen. The mother states that the eyes are usually straight but occasionally one or both eyes appear crossed. The proper correction of the child's refractive error is usually all that is needed to prevent an actual squint from developing. Too often, parents are told to leave the children alone and they will outgrow the squint. This is true in some cases but when the tendency to squint is present, due to a weak muscle, any irritation from illness, injury or otherwise may make the squint actual. This type of case usually clears up when the irritation is removed but will certainly bear observation.

In conclusion, it is well said that in view of our present knowledge, there is no excuse for anyone to have crossed eyes. The earlier they are treated, the better the results will be. The management of crossed eyes is divided into three stages: (1.) Correction of any refractive error. (2.) Stimulating binocular single vision. (3.) Operation. Many cases are cured in the first stage and no case should undergo the last stage (operation), without passing through the first two. Consequently, if we want a permanent cure, we must place the eyes in their natural position, by operation, so as to aid in stimulating binocular single vision, when stimulation has failed before operation.

#### OCONEE COUNTY MEDICAL SOCIETY *Resolutions*

WHEREAS, it has pleased Almighty God to remove from our midst our brother and co-worker, Dr. Joseph S. Stribling, therefore, be it resolved:

FIRST, that the Oconee Medical Society feel a personal loss in his passing, and our appreciation of his useful life spent in the practice of our profession.

Dr. Stribling was graduated from Bellevue Hospital Medical College, New York in 1888 and began the practice of medicine at once in Seneca, associating himself with Dr. O. M. Doyle. He continued here with only a slight interruption to the day of his death, rounding out 48 years.

It could be truthfully said of him that he gave

freely of his time and services—not only to those who could pay, but at times he actually spent himself to the point of exhaustion in serving those who could not pay.

In season and out of season, he was always ready to help his fellow-man.

Not only was he useful in his profession both to his fellow practitioners and to the public, but as a citizen, he had lofty ideals of justice and the right. His feet were firmly planted on these great foundation stones.

SECOND RESOLVED: that we extend to his bereaved family our sincere sympathy, and that a copy of these resolutions be spread upon the minutes and that a copy be sent to his family.

E. C. Doyle,  
J. W. Bell,  
W. A. Strickland.



## PRESIDENT'S PAGE

### DEATH OF PRESIDENT SAMUEL E. HARMON

At the time of the election of Dr. Harmon to be President Elect of the South Carolina Medical Association the Journal published the following editorial.

"One of the foremost leaders in organized medicine in South Carolina was elevated from the Council to be President Elect at the Charleston meeting, May 1, 1934. Dr. Harmon early in his professional career became imbued with the unlimited possibilities of organized medicine as the means whereby the physician may not only promote his own interests but particularly render a larger service to his clientele and the community in which he lives. Dr. Harmon was born in Lexington County, South Carolina, in the Saluda River Valley which is now under water as a result of the Lake Murray development. The son of Frederick Harmon the Second and Elvena Seay, of German Irish parentage. Dr. Harmon attended the country schools in the vicinity of his birth and later the city schools of Columbia and Newberry College. In 1899 he graduated from the University of Tennessee Medical School, Nashville. Subsequent to his graduation he did a general practice for some ten years. During the period of his general practice he was preparing himself for general surgery by frequent visits to the great medical centers of this country and taking post graduate courses there, such as the Post Graduate Medical School and Hospital, New York. About twenty-five years ago Dr. Harmon limited his practice to general surgery.

At the Aiken meeting of the State Medical Association in 1918, Dr. Harmon was elected Councilor from his District and in 1923 was made Chairman of that body, a position which he has held with commanding fidelity until he was honored with the office of President Elect. It is not too much to say that Dr. Harmon has adorned his long connection with the Council with rare courage, optimistic vision, and constructive leadership. He will bring to the Presidency a year hence an experience in organized

medicine of invaluable scope. This new honor, therefore, has come to one preeminently qualified from every standpoint."

The news of the sudden death of President Harmon during the Christmas holidays was received with genuine sorrow throughout the state. He had fulfilled in every particular the confidence of his many friends that his Presidency would be forever significant as a forceful administration of a leader whose knowledge and interest in organized medicine in South Carolina has been rarely equalled. Dr. Harmon was a militant supporter of organized medicine. He believed that in this way the profession had a mighty privilege of dynamic possibilities for good to the public and to the profession itself. Dr. Harmon was ready at all times, regardless of inconvenience to himself, to respond to the call of his fellow physicians anywhere in the State for any assistance within his power to render. He will be sorely missed in many circles of usefulness and honor in South Carolina. Upon assuming the office of President Dr. Harmon had well thought out plans for the meeting of the State Association in Greenville, April 21, 22, 23, 1936. It will be the purpose of the new President, Dr. R. C. Bruce of Greenville, and the various committees appointed by President Harmon to carry out these plans to the letter as far as possible.

Aside from his interests in South Carolina medicine Dr. Harmon was a Fellow of the American Medical Association, Fellow of the American College of Surgeons, and a member of the Southern Medical Association. He was a member of Ebenezer Lutheran church, and was active in the Masonic order, being affiliated with Acacia Lodge, Ancient Free Masons, and also with all higher bodies of the York rite, including Columbia commandery, No. 2 Knights Templars. He was also a member of Omar Temple, Ancient Arabic order, Nobles of the Mystic Shrine.

Editor.

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## JANUARY, 1936

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### THE MEDICAL COLLEGE AND ITS NEEDS

For well over a hundred years South Carolina has been supplied with its physicians by the Medical College of the State of South Carolina. Nearly three fourths of its doctors in smaller towns and rural districts are graduates of the School.

In 1913 the State recognized the value of a Medical College as a source of supply of medi-

cal attention for its people, and the college became a state institution, a place where its native young men and women could find competent instruction in the art and science of medicine without the difficulty and added expense of attendance at distant schools.

The increased difficulty of entering the limited classes at medical schools in general makes a state school essential for supplying the medical needs of South Carolina. Yet for some years past the state has reduced the budget annually so that for a long time the college has been running on a shoe string—and a very frayed string at that. From \$142,000 in 1930 the appropriation shrunk to \$52,000 in 1933 and has expanded unwillingly to \$80,000 in 1936. Meantime repairs, replacements, and new equipment wait on funds, such teachers as are paid remain well underpaid, and the college declines.

These things have been known with concern by Trustees and Faculty for many years. They have been known but overlooked by the legislature almost as long. Now the critical point is reached for a drastic change.

The Council on Medical Education and Hospitals of the American Medical Association has made a survey of the college, finds it lacking largely in respect to personnel, and makes very pertinent suggestions. Its report covers briefly the history and organization of the college. It notes that the maximum salary paid full time professors is \$3,100. It describes the buildings as "old and poorly arranged." It remarks on various departments, concluding almost every summary with the statements that without a larger competent staff the department cannot do satisfactory work. It speaks of the "almost impossible load" in one department.

The final comments of the inspectors are that "the Dean of the School of Medicine is an unusually high type and competent Dean.

"There is an excellent spirit throughout the institution and a beautiful demonstration throughout the four years of the course of the highest ideals of the practice of medicine.

"The relationship of the school of medicine to Roper Hospital and its Out-patient Department offers unusual facilities for the development of a high grade of medical education.

. . . Adequate support must be supplied to provide such personnel as not already available.



"In general the preclinical departments are inadequately staffed.

"If this college is to meet satisfactory standards it would seem to be important (1) that the State of South Carolina provide adequate funds for the conduct of the College; (2) that the Preclinical Departments be adequately staffed with competent teachers . . . ."

The implication in the comments is that unless changes be made, the school must lose its rating as a Class A College. Any other class of Medical School is unthinkable for students and teachers. South Carolina must put up—or shut up its chief source of medical care for her people.

J.I.W.

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## NEWS ITEMS

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The Maternity Institute held by Miss Anita Jones of the Maternity Centre New York, in Charleston Dec. 2-6 was excellently attended. This Institute was sponsored by the State Board of Health, The S. C. Public Health Association and the County and City Health Departments of Charleston. The Health Officers of the State attended one day. Miss Jones lectured to the Senior class of the Medical College and to the Senior class of Roper Hospital.

Welcoming talks were made by Dr. Jas. A. Hayne, State Health Officer, Dr. Ben F. Wyman, of the Department of Rural Sanitation, Dr. Leon Banov, Charleston Health Officer, Dr. L. O. Wilson of the Committee appointed by the State Medical Association to study the high maternal death rate in S. C. and Dr. Lesesne Smith, of the Maternal and Infant Hygiene Committee of the State Board of Health.

Renewed enthusiasm for the teaching of what constitutes adequate Maternity care, was a result of the Institute, with much though stimulated as to how to make such care available.

The Twentieth Annual Session of the American College of Physicians will be held in Detroit with headquarters at the Book-Cadillac Hotel, March 2-6, 1936. Dr. James Alex Miller, of New York City, is President of the Col-

lege and his address will be on "The Changing Order in Medicine."

The American Board of Ophthalmology will hold an examination at Kansas City, May 11, at the time of the meeting of the A. M. A. All applications and case reports must be filed at least sixty days before date of examination. Address Dr. Thomas D. Allen, Assistant Secretary, 122 South Michigan Ave., Chicago, Illinois.

South Carolina Pediatric Meeting, Tuesday January 28, 1936.

Luncheon at Francis Marion Hotel, 1 P.M.

1. Remarks by the President—William Weston, Jr., M.D.

2. Clinical Case Reports—Joseph I. Waring, M.D., Wythe M. Rhett, M.D.

Limited to 5 minutes each.

3. How can the Pediatrician and the South Carolina Society for Crippled Children Work Together. Julian P. Price, M.D.

Limited to 15 minutes.

4. What We Hops To Do in South Carolina Under the Child Health Bureau—D. Lesesne Smith, M.D.

5. A Discussion of Acute Anterior Poliomyelitis.—Opened by invitation by Wilburt C. Davidson, M.D., Dean of Medical School, Duke University, Durham, N. C.

## PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 296 (27848)

October 11, 1935

*Service of Dr. G. P. Richards*

Student Quantz (reading):

Negro female, age 36 years, admitted 4-1-35, died 7-17-35.

History: Cough and dyspnoea on exertion for 7 months. Unable to sleep at night without being "Pillowed up." Progressively increasing swelling of feet for 1 week, worse at night. Swelling of abdomen of 3 days duration. No cough before P. I.; no hemoptysis or night sweats. Pleural effusion 9-34. No statement on history as to fever. Nocturia 3-4 times; no burning or urgency. Menses regular, 28 day cycle, 3-7 days duration. Last menses Sept. 1934. No digestive symptoms. Injury to left breast a few days before admission.

Family History: Irrelevant. Married 1925, no children.

Exam: Fairly well developed and well nourished woman. Temp. 100, pulse 98, resp. 36 per minute. B.P. 176-120. Skin, eyes, ears, nose normal. Teeth dirty and carious. Cervical lymph glands palpable. Left breast enlarged and firm, 2 draining sinuses in left axilla. Lungs: Tactile fremitus, voice and breath sounds slightly greater over left lung. Dullness over both bases posteriorly, especially on left. Mediastinum normal. Cardiovascular: "Heart enlarged on percussion. Apex beat not satisfactorily located. Regular in rate and rhythm. Systolic murmur over mitral and aortic areas. A2 greater than P2. Radials are not tortuous or thickened." Abdomen: greatly distended. "Large smooth firm mass extending up to umbilicus." Some tenderness in R.L.Q. In sitting up position, tympany in upper abdomen, flatness in flanks; fluid wave present. Liver and spleen not felt. Edema of lower extremities noted.

Lab: Urine (4-2-35; 6-20-35) voided, S.G. 1.024, 1.020; alb. 0, 1 -; sugar, acetone, casts

neg.; leukocytes 0-10 HPF; RBC 0, 0. Blood (4-2-35, 4-7-35, 6-20-35) Hb. 58, 46, 45 per cent (D). RBC -; 4,120,000, -. WBC 4,750, 5,350, 3,150. Achromia 2 plus. Polys 74, 75, 86 per cent. Lymphs 23, 22, 11 per cent. Monos 1, 2, 2 per cent. Eosinos 2, 1, 0 per cent. Blood Wass. neg. Pleural fluid 6-21-35): 210 cc. lemon-colored fluid from right chest, turbid, cells 1 plus, lymphs predominating; no bacteria; Routine culture "Large gram-positive bacillus"; Culture for t.b. neg. Culture of pus from breast (for t.b.) (4-17-35) neg. X-rays of chest (Sept. 1934, 4-4-35) See chart.

Course: Temp. of intermittent type throughout hospital stay, ranging upward to 100-103 each night, down to normal or below in A.M. Pulse followed temp. Resp. 20-30 during stay. B.P. remained about 160-110 for first few weeks, falling gradually to 110-80 on 6-19, not recorded after this. Dyspnoea improved on digitalis, edema gone after 6 days hospitalization. On 4-8 complained of pain in right shoulder and left axilla. On 4-24 a new area of swelling was noted in left axilla. Sinuses continued to drain throughout hospital stay. On 4-26 complained of pain and soreness in "bottom of stomach," and these continued intermittently. On 6-10, dullness and absent breath sounds again noted in both bases, somewhat more than on previous exam; no new chest findings. 6-21 Fluid obtained from right chest, none from left. On 7-14 pt. noted to be "clouded" mentally, sleeping most of the time. "Groans when aroused and movement appears to be very painful." Became progressively weaker and died at 7:45 A.M., 7-17-35.

Dr. Lynch (conducting): Mr. Settle, what does this case suggest to you?

Student Settle: The cough, dyspnoea, edema and ascites all suggest cardiac decompensation. The abdominal mass is probably not related to the abdominal fluid, and it is my idea that it represents fibroids of the uterus. The lump



in the breast is probably a result of the breast injury. The draining sinuses in the axilla, continuing to discharge until death, suggest a tuberculous process there, probably a tuberculous adenitis. The fluid in the pleural cavities may be either of tuberculous or cardiac origin. The blood pressure shows a hypertension on admission, which gradually approached normal on bed rest.

I believe that this patient had a tuberculous lymphadenitis in the left axilla, and probably a tuberculosis of both lungs. Hypertensive heart disease, with decompensation, was probably present also. I believe that death resulted from the tuberculous toxemia and infection.

Dr. Lynch: How does that sound to you, Mr. Elders?

Student Elders: A history of cough for 7 months, with weakness, fever, anemia, suggests tuberculosis. The temperature curve is especially suspicious, rising as it does in the evening and returning to normal again during the night. The laboratory examination of the pleural fluid suggests that it was tuberculous. If the abdominal fluid had been of cardiac origin, I would have expected it to clear up when the edema did, and so I am inclined to believe that she had a tuberculous peritonitis.

Assuming that the patient had a tuberculosis of the lungs, it would seem logical that she later developed a generalized miliary tuberculosis. A polyserosistis is not uncommon in miliary tuberculosis. Here we have evidence of the involvement of at least two serous cavities. The abdominal mass could be part of the peritoneal tuberculosis. When there is a tuberculosis of the mesenteric lymph glands associated with a tuberculous peritonitis, it is not uncommon that masses are felt. But I also believe that she had a hypertensive heart disease, with some decompensation.

Dr. Lynch: What would you like to know in order to complete the diagnostic work-up to your satisfaction?

Student Elders: I would like to see the x-ray of the chest.

Dr. Rudisill: On a prior admission, in September, 1934, this patient was first referred to us for a chest film. At that time some fluid was noted in the bases of both pleural cavities.

The heart shadow and the aortic shadow were moderately enlarged. The small portion of the lung fields that could be clearly visualized, showed no pathology. The second film, taken on April 4th, 1935, appeared very much like the first, as you can see here (demonstrating films). There is some clearing of the fluid in the left chest, and the lung parenchyma still appears normal.

Dr. Lynch: What do you think of that, Mr. Elders?

Student Elders: Most of the pleural effusions are tuberculous, but in this case it could just as well be of cardiac origin.

Dr. Lynch: Are there any comments from the attending staff?

Dr. Robert Wilson, Jr.: It is usually very much safer to make only one diagnosis, if that will reasonably explain every factor of the case. Essential hypertension must have been present, but I do not believe that her heart was failing, or that she had any symptoms directly referable to her blood pressure. In this case all the symptoms and findings, except the blood pressure readings, could have been due to tuberculosis. The dyspnoea could have been due to the pleural effusions, which I believe were of tuberculous origin. The abdominal distention and fluid suggest tuberculous peritonitis. There may have been a tuberculous pericarditis as well. Edema is not uncommon in long-continued wasting diseases in which an anemia is present.

If this patient had had a failing heart, I would have expected rales in the chest and a palpable liver.

Student Pernwerth: I would like to ask Dr. Wilson a question. Wouldn't you expect to hear rales in the chest in pulmonary tuberculosis almost as constantly as in pulmonary edema?

Dr. Wilson: No. I believe that rales in the chest are universal and constant in pulmonary edema, and they are very frequently not heard in pulmonary tuberculosis.

Student Pernwerth: Still it seems to me that hypertensive heart disease with decompensation could serve as well for the unit diagnosis as tuberculosis. We must admit that the patient had essential hypertension. Cardiac decompensation could cause all the symptoms except the continued fever, which might easily be

explained on the basis of the low-grade suppurative process in the breast. The bilateral pleural effusions in 1934 might easily mean the beginning of decompensation at that time, when symptoms first became evident.

Dr. Chamberlain: I do not feel quite so strongly impelled to confine myself to one diagnosis, whether it be either tuberculosis or cardiac decompensation. Why not let them both have a part? The breast would not have continued to drain so long if the condition there had been a suppurative mastitis following trauma. And the blood count suggests a more chronic type of infection. I believe that the condition in the breast probably was tuberculous. But I believe that the first x-ray picture gives rather definite indication of heart failure, and the dyspnoea, edema and cough all tend to corroborate it. We cannot deny the existence of a hypertension: it was present for at least two weeks. That it fell to normal after that time may signify the hoped-for improvement in the cardiac situation, or it may mean the gradual onset of complete decompensation. She had no characteristic heart findings to help us with the problem.

The development of mental symptoms towards the end may have been due to a terminal tuberculous meningitis, which is frequently overlooked in moribund patients.

Dr. Lynch: Everything in this case except the blood pressure determinations can be explained, after the autopsy, on the basis of tuberculosis. The breast was definitely tuberculous, and the breast lesion appears to be the oldest lesion in the body. Altho there is definite caseation of the hilar lymph nodes, as one will find in primary pulmonary tuberculosis ("childhood tuberculosis"), there is no parenchymal lesion to correspond to the hilar lesion. Still, I fancy that her initial infection was in the lung. Apparently from the tuberculous

lesion in the breast and axillary lymph nodes, an acute miliary tuberculosis developed, with a tuberculous polyserositis. There was a tuberculous pleurisy (bilateral), peritonitis, pericarditis, and meningitis. The enlargement of the cardiac area, manifest by x-ray, was doubtless a result of the pericarditis, as there was no demonstrable myocardial hypertrophy at the time of the autopsy. The edema probably resulted from a combination of tuberculous pericarditis and anemia. The anemia itself was probably of tuberculous origin; with widespread tuberculosis in all organs examined, it is logical that there should have been a tuberculous involvement of the bone marrow.

The meningitis was probably the cause of the cerebral symptoms for the last few days. But as you can see in the specimen, the tuberculosis of the meninges was of longer duration than that, as there is rather extensive caseation there, with some actual extension into the brain itself.

The abdominal mass was a fibromyoma of the uterus, which was quite large, about the size of a grapefruit.

I want to draw attention to one thing in particular in this case, and that is the common belief, prevalent both among patients and physicians, that an injury to the breast can cause a lump to develop there. Except when the injury to the breast is severe enough to cause a hematoma, I do not believe that injury will cause a lump. Rather, it takes an injury to call a woman's attention to a lump that has been present in the breast for some time. Generally speaking, it is not wise to wait and see if a lump in the breast, first noted after injury, will subside. Frequently cancers of the breast lose all their possibilities of cure in that time. If the lump is definitely not a hematoma, and if there is no evidence of suppuration in the breast, there is no reason for waiting.



## EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

### RELATION OF BRONCHIECTASIS TO INFECTION OF THE PARANASAL SINUSES

*By Dr. G. E. Hodge,*

*Arch. Otolaryn., Nov., 1935, p. 537*

This relationship has been brought forward during the past fifteen years. Added interest and authority has been given by bronchoscopy and roentgenology, and by thoracic surgery and by the knowledge of the reaction of the mucous membranes of the respiratory tract to allergy and infection. Causal relationship between persistent bronchial suppuration and sinusitis was pointed out as early as 1914 by Thompson. It soon became established that a thorough examination of the sinuses should be made of all cases of pulmonary suppuration (Sergeant, Rist, Webb, Gilbert and others) and that this suppuration tends to clear up unless kept active by sinusitis. (Mullin—Graham). So evident was this that Wasson in 1929 suggested the term broncho-sinusitis for a general infection of the entire respiratory tract.

The incidence of infection varies from 58 per cent (Quinn and Meyer) to 82 per cent (Clerf), with the maxillary sinus as the chief offender.

Routes of infection from sinuses to lung:

1. A connection exists between the lymphatic drainage of the maxillary sinuses and the lung (Mullin and Hyder).

2. Inhalation may also be the route of the infection from the sinuses to the lung (Pfhaler, LeMee, Bouchet); this has been proved by Quinn, Meyer, and McLaurin, in showing oil in the thorax after the instillation into the nostrils or antra of sleeping patients.

"These experiments clearly demonstrate that chronic sinusitis must play an important part

in infections of the chest and that infection reaches the thorax chiefly by inhalation and by the lymphatic routes—These cases are often for years diagnosed as tuberculosis—The assumption then is that following sinusitis chronic bronchitis develops and in course of time bronchiectasis!" The method by which this occurs turns about the virulence of the organism, the individual susceptibility and in children upon immaturity of development, as is especially illustrated by the frequency of bronchiectasis in childhood; while Anspach suggested that atelectasis is the precursor of bronchiectasis in adults.

A triangular shadow at the base of the lung is a sign of atelectasis and bronchiectasis of the lower lobe. The drainage from this area is interfered with by thick secretion or in allergic swelling of the mucous membrane.

Bronchiectasis is thought to be produced by a deficiency of vitamins, a sinusitis from a deficiency of vitamin A. But a diet high in vitamins and deficient in protein will produce suppurative sinusitis and otitis, and a diet alone will not cure sinusitis.

Histocytes are the defensive cells in the acute infection while it is the plasma cells in the chronic cases.

Since hypoglycemia and ketosis play an injurious part in chronic antrum infection and bronchiectasis Sippe uses dextrose in their treatment; this also overcomes their inability to retain water in the tissues.

The present evidence tends to show that subsequent bronchial infection occurs on a suitable soil; such soil is frequently finding its occurrence in childhood.

Treatment should be of the upper respiratory; first of the sinuses, tonsils and adenoids, then of the lungs by bronchoscopic suction; postural treatment and vaccine therapy.

## SURGERY

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WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

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### "THE QUESTION OF HOMOPLASTIC SKIN GRAFTING"

Not infrequently in patients having suffered extensive third degree burns there does not seem to be sufficient intact skin from which to provide grafts for the granulating area. Moreover in these seriously ill patients there is a natural disinclination to mutilate still more skin surface or subject them to the further discomfort of removal of skin from the donor site. It is in such cases that securing skin for grafting from a source other than the donor would be the ideal procedure—provided that it were possible. Concerning this there is considerable controversy. While a number of cases have been reported as successful, upon a critical analysis they do not seem to satisfy the necessary postulates and accordingly have to be discounted. That the procedure is impossible of accomplishment and may even be dangerous is the opinion of Drs. H. M. Trusler and H. D. Cogswell of Indianapolis—J. A. M. A. 104: 2076 June 8, 1935. They present five cases of their own and a very good discussion of the present day thought on the subject.

Transplanting skin from one place to another on the same body is known as autoplasmic grafting. It is well recognized that this is a highly successful procedure. Transferring skin from one person to another is termed homoplasmic grafting. It is concerning the possibility of this latter procedure that there is still some doubt. As a rule the grafts fail to take and have completely disappeared within two weeks. However in some cases the homo-grafts appear to take and look as healthy as auto-grafts made at the same time. This is much more likely if the patient and the donor have no blood incompati-

bility. It is this group of cases which accounts for the number of successful results reported. It is the contention of the authors that in spite of the favorable primary take, these grafts do not remain viable, but slough after two or three weeks as a rule. In one of their cases six weeks elapsed before necrosis began. When sloughing takes place the appearance is often that of infection, but in their opinion infection is a secondary development, as might be expected, and not a primary factor.

Homoplasmic grafting is detrimental to healing, and even may be dangerous to the life of the host. In two of the author's cases homoplasmic skin grafting was followed not only by necrosis of the grafts but by chills and septic temperature, even though the bloods of their donors were compatible. In one of these cases the grafts took, homoplasmic and autoplasmic alike, but after several days the child became toxic and died.

The failure of homoplasmic skin grafting is considered as due to a biologic incompatibility—an antagonism of the host to the foreign protein of the skin of the donor. Technical error and infection can be controlled and can not be held accountable.

"The fact remains that, as commonly practiced, homografting of skin is useless, deleterious and unnecessary. Massive destruction of skin is usually due to a burn, and the individual who survives such an injury will have sufficient intact surface to make healing possible with the aid of grafts from the patient's own skin."

The advisability of early skin grafting can not be over-emphasized. By it much deformity, disfiguration and suffering will be prevented, and even lives saved.



## SOCIETY REPORTS

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### OCONEE COUNTY MEDICAL SOCIETY

The Oconee County Medical Society met at Seneca, Monday night, December 9, 1935, Dr. J. E. Orr, President in the Chair.

The minutes of the previous meeting were presented orally by the Secretary.

The business meeting was then entered into. A report of the Hospital Committee was made by Dr. J. N. Webb and Dr. E. C. Doyle. The suggestion was made that each member exert his influence with the representatives in congress in behalf of the hospital.

The Secretary presented a communication from the Dean of the Medical College calling on all doctors to see their representative in the Legislature in regard to increased appropriation for the school.

Dr. J. H. Johns discussed the proposal at length and asked for information as to the real need of increased funds. Dr. Johns was requested to write the Dean for further information.

Dr. E. C. Doyle reported resolutions on the death of a former member, Dr. J. S. Stribling of Seneca. These resolutions were adopted by a rising vote.

On report of Censors Drs. Joe Johnson and V. W. Rhinehart were elected to membership. Election of officers resulted as follows.

Dr. W. C. Mays, Fair Play, S. C., President.

Dr. J. T. Davis, Walhalla, S. C., Vice President.

Dr. E. A. Hines, Seneca, S. C., Secretary.

Dr. Harry Ross was elected delegate to State Medical Association with power to appoint his alternate.

The Society entered into the Scientific Program. Dr. J. W. Jervey, Jr. of Greenville presented a paper on the Upper Respiratory Infections. The paper was highly complimented for the practical applications of same by the general practitioner.

Dr. Harry Ross presented a Case Report of Black Water Fever, which was discussed by Dr. Harper of Anderson, Dr. Hines of Seneca and others.

Dr. E. A. Hines presented a patient with Leukemia which disease was discussed by Dr. Frank Wrenn, Roentgenologist of the Anderson County Hospital and many others.

Dr. R. C. Bruce, of Greenville, President Elect S. C. Med. Asso. and Dr. Buck Pressly, Councilor 3rd District were present as visitors.

A delightful Dutch dinner was enjoyed by the members of whom the following were present, Drs. E. C. Doyle, Johns, Orr, Ross, Webb, Simpson, Hines, Davis, Bell, Mays and members elect, Johnson and Rhinehart.

E. A. Hines, Secretary.

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### COLUMBIA MEDICAL SOCIETY

The annual election of officers was held at the Columbia Hotel, December 9, 1935, at 8:30 P. M., Dr. O. P. Mayer, presiding.

Minutes of the previous scientific meeting was read and adopted.

Dr. O. P. Mayer, President, presented a brief summary of the activities and financial status of the society during the year 1935, and in closing thanked the society and committees for their co-operation.

Election of officers was next in order, Drs. Adcock, Cheatham and Quattlebaum acted as tellers.

Dr. Theo. M. DuBose, Jr. was elected president for the year 1936 and was escorted to the chair by Dr. Hutchinson and Dr. Rodgers.

Dr. David Adcock was elected Vice President. Dr. Benj. Rubinowitz was reelected Secretary. Dr. Thomas Dotterer was reelected Treasurer.

Delegates elected for 2 years were Dr. Floyd Rodgers, Dr. Manly Hutchinson and Dr. Watson Talbert. Dr. Walter Bristow was elected delegate for one year to fill the unexpired term of Dr. T. M. DuBose, who by the election to the presidency became automatically a delegate. Dr. E. W. Barron is a hold over delegate for one year.

Dr. A. F. Burnside was elected to serve on the Board of Censors for three years. The hold

overs on the board are Dr. Manly Hutchinson and Dr. H. H. Plowden.

Dr. DuBose announced that he will appoint committees for year 1936 at a later date.

There were 40 members present.

Society adjourned at 9:45 P. M.

Respectfully submitted,  
Benj. Rubinowitz, Secretary.

## EDISTO MEDICAL SOCIETY

The regular meeting of the Edisto Medical Society was held Dec. 19, 1935, at 2:00 P. M., at the Hotel Eutaw with the president, Dr. Jas. A. Forte, presiding.

Dr. E. W. Barron read a paper on "Care of the New Born," and Dr. T. D. Dotterer read a paper on "Infant Feeding." Both papers were very interesting and were freely discussed.

Those present were Drs. Browning, Mack, Matthews, C. I. Green, Schiffler, Shecut, Brabham, Mobley, Bolin, Black, Lowman, Eargle, Forte, and Glennan.

Dr. Browning stated that there was a man practising at Ellore who was a chiropractor and did not have a license to practice medicine. He asked that something be done to stop this sort of thing.

Respectfully submitted,  
H. M. Eargle, M.D.,  
Sec. Edisto Medical Society.

## TRIBUTE TO DR. WALLER H. NARDIN

In the recent death of Dr. W. H. Nardin the Anderson County Medical Society suffered a keen loss. For more than a third of a century he was an active member of this Society, and his sound judgment and wise counsel will be greatly missed. In recording this, our tribute of respect to his memory, we make no effort to catalog the numerous honors that were his during the thirty-five years of active practice. Rather do we wish to evaluate his particular contribution to our professional and community life.

Dr. Nardin was a student. He built up an excellent library, and a well chosen list of medical journals were always in evidence in his office. He kept up with advancing medical thought, but

he had decided opinions of his own; and when those ran counter to medical opinion, he followed his own judgment. For instance, he believed and practiced that for short-office operations chloroform was the anesthetic of choice. And in doing many thousand office operations he developed a rare skill in supervising the administration of chloroform.

Dr. Nardin was the first doctor in Anderson who became a specialist, and for a period of more than twenty years he had a very large practice in his chosen field. He demonstrated to the profession of this county that the ethical technique is quite successful in building up a referred practice. To him this was one of the "durable satisfactions" of his professional career.

The outstanding community service that Dr. Nardin rendered was his work among boys. For thirty-five years he was father confessor, big brother, buddy and pal to the high school boys of Anderson. During these years he gave to each succeeding group freely of his time and advice and many boys—now men—in widely scattered places would gladly join us today in paying tribute to him for this unselfish service. To him during the long evening days of his last illness this work for his boys was one of the "durable satisfactions" of life.

No appraisal of Dr. Nardin by one who knew him well would be complete that did not mention his love of nature. To him "nature was a revelation of God." He loved to "go forth under the open sky and list to nature's teaching." Wild flowers, trees, shrubs, and birds were his friends.

"To him who in the love of nature holds  
Communion with her visible forms, she speaks  
A various language; for his gayer hours  
She has a voice of gladness, and a smile  
And eloquence of beauty, and she glides  
Into his darker musings with a mild  
And healing sympathy, that steals away  
Their sharpness, ere he is aware."

Was it not beautifully fitting that the long tedious days of his last illness were rewarded by several months of improved health? Much of this time he spent in very close communion



with the visible forms of nature, and became acquainted with her various languages. But the dominant note must have been one of a deep abiding peace and healing sympathy that stole away the sharpness of his forced retirement and suffering. And "so nature dealt with him and by the hand led him to rest so gently that he went scarce knowing if he wished to go or stay."

Committee—Anderson County Medical Society.

This tribute was read at last regular meeting December 11, 1935.

### PEE DEE MEDICAL ASSOCIATION.

The following program was given at the 87th meeting of the Pee Dee Medical Association, held at Florence, S. C., Tuesday Evening, November 26, 1935:

1. Recent Advances in the Treatment of Acute Infectious Diseases in Children, Dr. Sam Ravenel, Greensboro, N. C.

2. Indications for Surgery in the Treatment of Thyroid Disease, Dr. Addison Brenizer, Charlotte, N. C.

3. Endocrine Therapy in Obstetrics and Gynecology, Dr. Oren Moore, Charlotte, N. C.

4. The Igorot and Modern Medicine, Dr. Hawkins K. Jenkins, Sagada, P. I.



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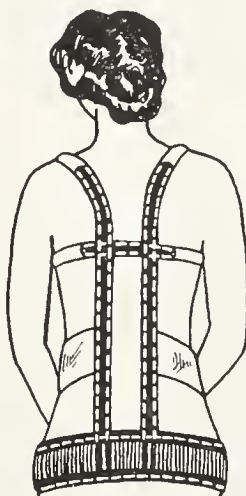
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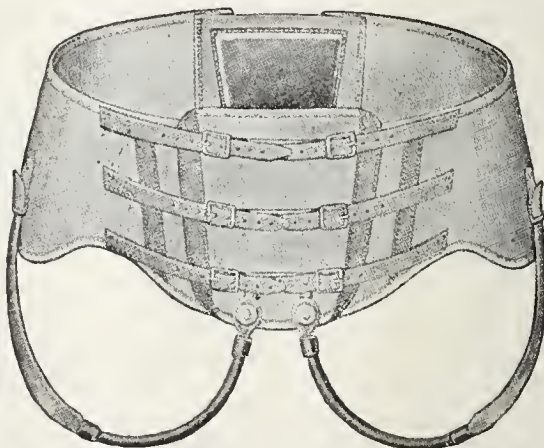
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### THE THREE "P's" OF PHTHISIS

By

JOHN M. PRESTON, M.D.,  
Lancaster, S. C.

Without fear of contradiction I might well consider the three "P's" of Phthisis, or Pulmonary Tuberculosis, to be Patience, Persistence, and Perseverance, for certainly Patience on the part of both Patient and Physician is of paramount importance. However, this brief discussion is confined to the surgical procedures of Pneumothorax, Phrenicclasis and Pneumolysis. These three relatively simple procedures, all based on the fundamental principle of rest to the lung are very often of invaluable aid in the treatment of Phthisical patients.

To plunge abruptly into their discussion we shall begin with Pneumothorax. As indicated by its name it means air in the thoracic cavity, certainly in an abnormal relation. In simple breathing there is expansion and contraction of the chest cavity with a corresponding ingress and egress of air, caused by the altered relation between intrathoracic and atmospheric pressure. Consequently the nearer the approach to atmospheric pressure within a chest, the less the motion of the lung in that chest. It is on this simple principle that Pneumothorax is wrought. By simply injecting air (frequently referred to as "gas") into the pleural cavity the parietal and visceral layers are separated, with resultant decrease in the expansion of the affected lung. Cavities are thus collapsed and allowed to heal. Exudative lesions are compressed and

healing is thus accelerated. Motion within the lung is brought to almost nil.

Indications for Pneumothorax are:

1. To partially or completely immobilize a lung.
2. Cavity in a lung.
3. Exudative type in moderately advanced stage. (This group includes all females in the teen-age, and most negroes.)
4. Spreading lesion.
5. Severe hemorrhage from a lung.

Pneumothorax is unfortunately, not the complete answer to the Phthisiotherapist's prayer, but it is a most valuable adjunct in his handling of phthisical patients.

The initial injection of air is the one which requires the utmost in skill of the operator. The two layers of pleura are in close contact and may even be adhered due to proliferative changes caused by the underlying disease. On the other hand the visceral pleura may be greatly weakened by the disease and admit of too ready puncture into a cavity. A short-bevel needle of medium capacity is slowly introduced through a novocainized area until there is observed on the watermanometer of the Pneumothorax outfit a waver in the column due to inspiration and forced expiration. There is usually a definite "feel" of altered resistance, to experienced hands, as the needle punctures the parietal pleura. The volume of the initial injection varies with different operators, but seldom exceeds 1000 cc., about 300 cc. appearing a fair average. Some clinics complete their collapse of the lung fairly rapidly, and some more slowly. To the conservative mind the slower method seems to offer the same advantages with less danger of attendant shock. It must be admitted, however, that rapid compression in



cases of severe hemorrhage have proved to be life saving. The frequency of refills, also, varies with different clinics. Some clinics give small amounts often, while others prefer large volumes at less frequent intervals. In places equipped and staffed for such work, the frequent, small refills might well have the preference, as they certainly maintain a more constant and even pressure, but where the operation requires much inconvenience and activity on the part of the semi-ambulatory and bed patient the less frequent refills seem to suffice. The interval observed by the writer in various clinics was from 2 days to one month. An average of from 5 to 7 days appeared to be a normal interval.

The necessity for "refills," is explained by the fact that the air injected is absorbed by the pleura. With increasing volumes of air injected into the pleural cavity the pleural surfaces are increasingly separated and the lung correspondingly collapsed, preferably to the point of complete deflation.

The amount of pressure created within the thorax by pneumothorax is a matter of individual preference. Saranac Lake Clinics never exceed negative or zero pressures while Bellevue Hospital believes in the use of positive pressures in most stubborn cases.

Unfortunately, however, the procedure is not so simple and satisfactory as here-to-fore described. The main difficulty is encountered from adhesions between the two pleural surfaces. How to deal with these will be considered under Pneumolysis. The so-called "creeping lung" which one occasionally meets with presents a most serious obstacle to Pneumothorax. This condition is simply a progressing adhesion beginning at the hilum and eventually encircling the lung, thus pulling it out or expanding it again. Thoracoplasty is the only recourse in such a condition.

Phrenicectomy was hailed a few years ago as the long sought method of quick cure for the Tuberculous. As is so frequently the case with some over-enthusiastically received discovery, the pendulum of popular favor is now swinging away from phrenic operations. All types of operation on the phrenic nerve with paralysis of the affected side of the diaphragm as a goal have

been tried. These have included Phrenectomy (same as Phrenicectomy) which is removal or complete resection of the Phrenic nerve, Phrenicexeresis, which is pulling out of the nerve, Phreniclasia, or crushing of the nerve with a clamp, and Phrenicotomy or surgical division of the Phrenic nerve and its accessory. Phreniccoexeresis, or Phrenic Avulsion, and Phrenectomy are practically obsolete now as they cause irreparable changes so that if they do not prove successful they can not be substituted by any other procedure. There is also some attendant danger of hemorrhage in cases of phrenic avulsion.

Phrenicotomy has proven just as unsatisfactory except as a means of making the diaphragmatic paralysis permanent. Therefore, the operation of choice today is the Phreniclasia. This has the advantage of being not only a simple surgical procedure, but also a relatively safe experimental measure. When properly done, the paralysis of the diaphragm lasts from six to nine months, or occasionally longer. If the patient's condition, as determined by history, physical examination, X-ray fluoroscope, and other laboratory tests, warrants it, the operation can be repeated *per se*, or made permanent by performing a phrenicotomy. This is, however, rarely necessary. As an Internist, I do not presume to give any details of the surgical procedure, but will presume to drop this helpful hint. Many surgeons loop a black silk ligature around the nerve at the first operation and bring the loose ends up into the wound where they bury them just beneath the skin. This greatly facilitates locating the proper nerve at the second operation, when scar-tissue has largely obliterated the landmarks. Another timely suggestion is to be sure you get the accessory from the brachial plexus, or you will be disappointed in your results.

Some physicians object to the phrenic operation on the ground that it compresses only the lower third of the lung, and is hence indicated in very few cases. These objectors overlook the fact that when an elastic structure under tension is allowed to contract, it contracts an equal amount in all portions. A large adhesion, however, in the upper portion of the chest, which was keeping a cavity open, would prob-

ably continue to hold it open even in the face of a diaphragmatic paralysis. The apex of the lung is so located as to get practically no expansion from the up and down motion of the ribs. Therefore, the downward pull of the contracting diaphragm is its only method of expansion. This shows that Phrenics are indicated in apical lesions. Scaleneotomy in conjunction with phrenics give good results in many such cases.

Phrenic operations are indicated only in selected cases. Some of these indications are:

1. Many small lesions with or without cavities.
2. Large unilateral lesions in which Pneumothorax is impossible.
3. In many bilateral lesions, either on the worst side, or on the side where Pneumothorax cannot be given.
4. As an adjunct to Pneumothorax (cases with Diaphragmatic adhesions or where collapse therapy must be abandoned.)
5. Controlling Hemorrhage.
6. In cases where the patient cannot get Pneumothorax refills.

After a phrenic operation most patients will be seen to cough less, and to raise their sputum with much less effort.

When considering the minor results obtained by phrenic operations it is necessary to remember that it is a minor procedure. An old fibrous walled cavity will naturally not collapse as readily after a Phrenic operation as a thin walled one. Phrenics undoubtedly do have their place in properly selected cases, but one must not expect too much of them. The success of the Phrenicosis depends on how much you expected to accomplish when you resorted to its use.

Pneumolysis the last operation to be considered in this discussion, is the surgical separation of the pleural layers in order to facilitate lung collapse. This is known, strictly as internal pneumolysis, the external type being the stripping of the parietal pleura from the fascia of the thoracic wall, and having no place in this treatise. The only form of operation to be described here is the closed method of cutting pleural adhesions, or the Jacobean Operation. Through the development of the thoracoscope to

its present state of perfection we are now able to make many cases of Pneumothorax much more effective than formerly.

The typical case in which Pneumolysis is indicated is one in which Pneumothorax is being used, but which is not closing a cavity adequately, because of pleural adhesions. As was indicated earlier in this paper, it is not an uncommon experience to get a 90 or 95 per cent collapse of a lung with pneumothorax, and yet fail to get the proper results because the very cavity which you are trying to close is held wide open by bands of adhesions. In such selected cases the double puncture method of intrathoracic surgery is the answer to this perplexing problem.

The operation is usually done with the patient sitting up or lying with the operative side up so that any fluid in the chest will be kept out of the way by gravity. Two trocars are introduced through the intercostal spaces, one in the axillary line and the other in the front or back of the chest. Through the trocar in the axilla there is a flexible handle having on its tip either an actual cautery or an electrosurgical knife, usually the former. The other trocar carries the endoscope, much like an ordinary cystoscope. By looking into the pleural cavity with the telescope the operator locates his adhesions and proceeds to cut them with the cautery, by direct vision. In cutting long, string adhesions, there is usually no pain felt by the patient, but if it is necessary to cut very close to the parietal pleura there is sometimes the sensation of pain. If this occurs novocaine can be applied to take care of the situation. The cutting should be done far enough from the parietal pleura to escape pain, and far enough from the visceral to escape the danger of rupturing a cavity. Low heat is usually used in the cautery so as to prevent bleeding. This makes the cutting of large thick adhesions very slow, but speed is not essential in this work. Some of these operations have taken several hours at a single sitting, and were terminated then only because the patient and the surgeon were becoming very tired of maintaining their awkward positions.

Unfortunately the X-ray picture does not always give you a clear conception of what you



are going to find in the chest. Cases which appear from X-ray to have one or two easily cut adhesions may have dozens of them, or even be inoperable, while some which appear to have very large adhesions may appear so from the angle at which the picture was taken. A small stab wound through a novocainized intercostal space causes very little discomfort to the patient and makes it well worthwhile to slip in a thoracoscope and actually see if the case is operable or not. In other words an exploratory puncture is a safe procedure, not fraught with the seriousness of an exploratory laparotomy and hence undertaken much more readily.

After Pneumolysis there is frequently a subcutaneous emphysema lasting from 2 to 4 days, but this usually passes off spontaneously without ill effects.

This paper has no bibliography, contains no actual quotations, and no names. It is merely a rambling sort of reminiscence of cases actually seen and lectures heard from some of the best men in two of our country's greatest Tuberculosis Clinics today. It does not purport to be an authoritative treatise, but merely an informative discussion offered here in case any of you have the misfortune of knowing as little about some of the present day chest work as I do.

## THE CLINICAL APPROACH

By

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Philadelphia

Your kind invitation to deliver the Founders' Day Address awakened in me a natural desire to know something of the history of the Medical School of South Carolina. I found that true to South Carolinian traditions its history is full of romance. Moreover, its beginnings were closely interwoven with my own state of Pennsylvania and the city of Philadelphia. James Ramsay, one of the founders of your medical college, was the son of the famous David Ramsay, a native of Lancaster, Pennsylvania, graduate of the University of Pennsylvania, patriot

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Founder's Day Address delivered by invitation before the Medical College of the State of South Carolina, November 13, 1935.

and historian of the American Revolution. Henry Rutledge Frost and Samuel Henry Dickson, co-founders of the school, were also graduates of the University of Pennsylvania. Frost for two years was a resident physician in the same hospital in which I served my internship some generations later. Dr. Thomas Cooper, physician, lawyer, educator, statesman, for twelve years President of the University of South Carolina, also had contacts with Pennsylvania for he migrated there from London. Well trained at Oxford and in medicine and law, he made a distinct contribution to life in America. Cooper was President at the time when J. Marion Sims, one of the greatest figures in American medicine, was a student in the college. Sims afterwards was graduated from the Jefferson Medical College in Philadelphia, thus creating another connection between Penn's city and your University. Edmund Ravenel, first Professor of Chemistry and Pharmacy, and John Edward Holbrook, Professor of Anatomy in the first faculty, were also graduates of the University of Pennsylvania.

The Medical School of University of Pennsylvania from which nearly all of the original faculty had received their degree, was the first medical school established in this country. In a strict sense it was the daughter of the University of Edinburgh, a fact of interest to South Carolinians inasmuch as ten native sons of South Carolina between 1768 and 1778 like Morgan and Shippen, the founders of the medical school in Philadelphia, received their degree from the Scottish University.

Coming down to more recent times I find another bond uniting my Alma Mater with yours. John Guiteras, Professor of Pathology and Practise of Medicine and Clinical Medicine in your school from 1886 to 1888, left Charleston to become Professor of Pathology in the University of Pennsylvania. He was my teacher; afterwards I became his assistant and when the Cuban war broke out and his patriotic energies were enlisted on behalf of his native island, all of his work devolved upon me; thus as a pupil and associate of your former professor of medicine, I may claim a relationship to your school.

For the specific subject of my address today

I have chosen "The Clinical Approach," by which I mean the approach of the doctor to his patient. This involves a relation that is older than the memory of man. In a sense it is the same now as it was in the beginning. I shall describe it as I have observed it in a long and fairly active life.

When a patient who deems himself ill pays his first visit to a doctor the occasion is to him one of momentous significance. To the doctor the visit may be all in the day's work. If he, the doctor, does not have the right understanding of the human soul, if he cannot put himself in the patient's place, not alone will he fail to satisfy the patient but he will also not be true to the immemorial ideals of the art of medicine.

What does the patient want when he calls upon the doctor? He wants to be relieved of his suffering and he wants to be understood. The doctor must therefore not only discover the physical defects but he must also penetrate the mind of the patient. Where the power to do the one and the power to do the other are conjoined, there the patient will find a tower of strength, which is what the physician should be. As Llewellys Barker puts it "the practitioner of medicine must learn to understand not only the bodies of his patients but their minds also, their thoughts, their desires, their pleasures, their purposes, their disappointments—the strings of their behavior."

It is not enough to be able to discover the physical ills and the mental perturbations—the true physician must be resourceful, sympathetic and patient. I have wondered at times whether Job, who bore his physical sufferings with such exemplary strength, would have listened uncomplainingly and patiently to the repetitious, unintermittent stories of complaints of some neurotic women I have seen and listened to? And yet it is demanded of the doctor that he listen patiently and with his whole mind.

To do our full duty as physicians requires a multitude of activities and procedures, but first of all it requires knowledge. It is the charm of medicine that it is never static; it grows like a snowball on an Alpine mountain, but without end. Medicine is no longer what Francis Bacon said it was in his time—"More repetition of the

opinions of previous authors than the creation of new knowledge." No other human discipline is so active, none so eager to incorporate the work of other sciences into itself. One needs only to read the reports of recent meetings such as the one in Detroit or the one in San Francisco, as published in the New York Times and in Time, to realize this fact.

A further proof of activity, not always well directed we must admit, is the tremendous literary output. While the theologian is interested only in the literature of his own denomination, the lawyer in the reports of a few courts, physicians eagerly scan all the new things of all civilized countries either in the original or in abstracts in their vernacular journals. The late Colonel Fielding H. Garrison informed me shortly before his death that there were 1925 medical journals published in 1927, an enormous output, but all in a sense belonging to every physician who wants to read. Needless to say there is too much to read and a moratorium on medical printing would be a great boon, but it cannot be achieved.

Another feature differentiating the doctor from the preacher and the lawyer is his eagerness to improve himself, to increase his knowledge in other ways than by reading. That accounts for the support he gives to innumerable medical societies. I was in Detroit in October and saw thousands of practising physicians from all parts of the country, sitting for five days at meetings from 8 A.M. to 10 P.M., with only a little time out for meals. There were young men and old men, country practitioners and titled teachers. Many took notes diligently as they did when they were medical students. I was proud of my doctor clan—no other persons in the wide world make such monetary sacrifices or go to so much trouble to increase their knowledge. The public does not realize the import of postgraduate study, it overlooks the fact that thereby the doctor is able to render better service to his patients. A community could well afford to subsidize its doctors for such study.

Medicine, I am happy to say, is steadily becoming more of a science, a science that absorbs into itself the work of other sciences, especially of physics and chemistry. There is,



however, a danger in this transformation, the danger that in the pursuit of the science of medicine, the art of medicine may be neglected, may be relegated to a secondary place. It is all too easy to overrate the achievements of science. Thus H. G. Wells says extravagantly, "Scientific work is a world apart, a magic island cut off from futility." He does not realize that much of the work coming out of the science laboratory has the same cosmic value as some of the theses for the Ph.D. degree. I am afraid we are suffering in medicine as in other branches of learning "from an excess of useful knowledge and a deficiency of ideas."

There is a tendency among some medical scientists to deprecate work done at the bedside. In their eyes nothing is truly respectable that has not in it an algebraic equation or a graph. And the medical man has nearly reached the same conclusion and in consequence has developed an inferiority complex which makes him bow down humbly at the feet of the laboratory investigator. Is that a proper state of affairs? I do not think so. In my opinion the bedside offers endless opportunities for clinical research, for research which as a product of the mind requires as high an intelligence as any laboratory problem. Furthermore, a difficult case in diagnosis may make demands on the mentality such as are rarely known to the average performer of animal experiments. I am saying this because I want to make bedside study again as respectable and as reputable as it was in the day of Graves, Bright, Addison, Trousseau, Charcot, Leyden, Struempell, Da Costa, Janeway, Osler. There is, however, a difference between these great scientists—for scientists they were, although they did not make use of costly apparatus—and the best clinicians of today. The latter know enough of the science of medicine and of the possibilities of the laboratory to give their clinical studies a broader and fuller basis.

Insulin is a product of intensive laboratory research but its uses and usefulness could be tested only by scientifically-minded, honest clinicians. In pernicious anemia the association of scientific laboratory experiments and careful bedside study has given us power over a disease that until 1926 was considered utterly hopeless.

To me the finest combination imaginable is a clinician trained both in the laboratory and at the bedside, who despite his deep faith in the laboratory has not lost sight of the immemorial methods of observation, of the value of a good history and a thorough physical examination, an examination aided by all the refinements of the laboratory applicable to the case in hand. I am using the words "applicable to the case in hand" advisedly for they imply, as they are intended to do, disapproval of the wholesale or hopper method of laboratory examination so popular in many quarters.

The routine ordering of a multitude of laboratory tests though it may eventually lead to a correct diagnosis, often goes with an indifferent examination at the bedside. Let the laboratory do it, is the thought of many who fail to appreciate the value of the traditional methods of studying patients.

I look upon the laboratory not as a separate institution to which one should appeal for a diagnosis but as a limited source of information to be used to fortify or corroborate a diagnosis already made on the basis of the history and the physical examination. There are of course instances in which the final diagnosis cannot be made without the laboratory. But a provisional diagnosis is nearly always possible and that provisional diagnosis should guide and determine the laboratory studies to be made. Dr. Stillman of New York once wrote an article in which he spoke of an interne in a New York hospital who on the admission of a patient complaining of cough, wrote, 'Sputum to laboratory.' The sputum was sent every day and after many trials—I believe twelve—the report came back "tubercle bacilli present." The resident physician was under the impression that he had made the diagnosis. The question is who was more responsible, the nurse who sent the sputum faithfully every day until the result was obtained or the woman technician in the laboratory who looked conscientiously for tubercle bacilli and found them? Needless to say the interne, in his reliance upon the laboratory, had neglected a thorough physical examination.

Every young physician ought to be able to perform all the essential laboratory tests him-

self. The existence of clinical laboratories has made it entirely too easy to obtain reports, usually made by technicians to whom the patient is merely a number. I do not mean to say that the doctor should do all the laboratory tests but he should know how they are done and until his practice is very large, he should at least make his own urine, blood and puncture fluid examinations, as well as the most important chemical studies of the blood.

The student of today is very apt to think that his generation and perhaps the one immediately preceding it have made all the important discoveries known in medicine. This is far, far removed from the truth. Virtually most of the diseases we know were discovered and described ages ago. A few have been added but the terminology in which their symptoms are described is that of the past and our methods of physical diagnosis aside from the use of instruments of precision are those that we owe to Auenbrugger and Laennec.

The first step in a complete examination is the obtaining of a good history. I believe one ought to let the patient tell his own story, supplemented by occasional questions and to make no notes until one has gotten a lead or the drift of the patient's complaints; then the questions designed to bring the complaints to a focus can be more easily asked. It takes patience to listen to "organ" recitals but patience brings patients.

While asking questions and getting answers the alert physician studies the patient's psychology, his mental make-up, determining in the process where he or she exaggerates or minimizes symptoms. As I consider this phase of history taking important, I do not favor the questionnaire type of blank which provides for a check or a plus or minus sign after every question. It is too mechanical and gives no chance for psychologic penetration into the patient's ego.

The family history is of great importance especially in obscure cases in which malignant disease is a possibility. A history of such disease among blood relatives renders the diagnosis of malignant disease more plausible.

Our knowledge of hereditary diseases is still fragmentary. We know much about little things, about heredity in pease and in fruit

flies but little about heredity in man. By paying attention to this subject in our histories we shall in time accumulate a body of knowledge that will tell us what diseases are inherited on Mendelian or definitely biological lines. Hemophilia, angina pectoris, hypertension, diabetes, pernicious anemia and others may belong here.

A good history takes account of the occupation of the patient—not merely in a single word such as bookkeeper, laborer, carpenter or engineer; it goes into detail as to whether the work is indoors or out-of-doors, standing or sitting, in good light or bad, in a dusty or a non-dusty atmosphere. I remember a patient, a young road engineer, 29 years of age, who was supposed to be dying of metastatic carcinoma of the lung. The lungs as was shown in X-ray films were filled with innumerable small nodules. The patient was more short of breath any anyone I have ever seen. I could find no primary growth so I went a little more carefully into the history and found that as a road engineer he had been exposed to the dust of crushed stone, the unloading of which he witnessed day after day. It was easy on the basis of this historic finding to make the diagnosis of silicosis which was afterwards confirmed at autopsy.

Another feature the historian must take into account in the study of patients is the social and domestic environment. Many a case of neurosis or of phobia will remain a sealed mystery unless the doctor finds in the anamnesis the open sesame. Until the advent of Freud the key was often hard to find but by means of psychoanalysis the physician is now able to penetrate into the subconscious mind and find the hidden springs of many neuroses and anxiety states. I do not think that in the average case it is necessary to use the time-consuming and costly Freudian methods. Nevertheless, the discoveries of Freud,—the greatest psychologist since Aristotle, as he has been called—of Franz Alexander and of others have definitely attracted our attention to deep-seated disappointments and discontents, to shocks and other psychic trauma, as a cause of functional disturbances, many of which are attributed to organic disease. That sexual frustrations are an important element in such conditions will not be denied by anyone with large experience in



mental and nervous diseases; furthermore, many problems of child psychology are not understandable unless one is aware of such concepts as the inferiority complex, mother fixation, etc., ideas and phrases we owe to psychoanalysis.

The history likewise includes data as to the habits of eating, sleeping, hours of work, hours of recreation, kind of recreation, the sex life, the use of narcotics, cosmetics, etc. There are so many things that we now know play a role as possible factors in disease that the taking of a history becomes a real cross-examination.

A few days ago I was asked to speak to a group of business women on how to preserve health. Thinking about what I should say I came to realize how important it was for such women to know the value of sleep, of recreation, of slow eating, as well as the foolishness of dietetic fads, especially those designed to reduce weight.

After the history is completed then follows the physical examination, and here I want to say that one of the most important elements is routine, a routine method which the physician follows automatically in every case.

I have always told my students that I did not ask anything unreasonable in the physical examination. All that I wanted them to examine was what lay between the crown of the head and the soles of the feet—a *capite ad calcem* was the ancient terse phrase.

The patient must be stripped to the waist, the back and the front must be examined. There are many conditions that are only discoverable when examining the back, such as chronic forms of pneumonia, certain types of aneurysm, Pott's disease, etc.

A complete examination includes of course the reflexes, the important ones in all cases and special ones in cases of nervous diseases. Digital examination of the rectum should never be omitted—it may prevent an error in diagnosis that can cost the patient's life.

When the physical examination, including the taking of temperature, pulse, respiration, blood pressure, height and weight, is completed, the laboratory studies begin. Some of these are routine, that is they must be made in every case no matter how trivial. Once a patient came to see me from Atlantic City saying that he had

had a cold for some time and that his wife had insisted that on his next visit to Philadelphia he should see me. I said "Very well, I want to examine you. He said "Oh, doctor, there is nothing the matter with me but a slight cold. I am very busy this morning. Can you give me something for my cough?" When I declined, he consented to the examination—I found that he had over seven percent of sugar in the urine and was totally unaware of his diabetic state.

The routine laboratory examinations comprise urine examination and a complete blood count. In hospitals the Wassermann test is almost routine, in private practice this is not necessary, for many persons come with ailments that are diagnosed immediately and without difficulty. The alert physician will however have the test made whenever there is the least suspicion that syphilis might be a factor.

Blood chemical studies are of value, not only in the individual case but through accumulated data they teach us certain fundamental facts about the constitution of the blood. However, one must know how to interpret the data supplied by the laboratory. During the last few years I have seen a number of persons in whom the non-protein nitrogen or the urea nitrogen was increased eight or ten fold, suggesting advanced disease of the kidneys. A careful analysis showed that this finding was the result of dehydration and not of renal disease.

Basal metabolic rates are of great diagnostic value but here too one must not be carried away by the laboratory results but must stand on the firm ground of clinical experience.

The electrocardiograph is a useful instrument which supplies a permanent record of the heart's behavior, a record that can be compared with future tracings. But one must not get the idea, in the belief that the electrocardiograph tells us all that we need to know, that it is no longer important to make the most careful physical examination of the heart. The electrocardiograph can never take the place of the experience of the careful clinician who in the last analysis is best able to arrive at a correct diagnosis and prognosis.

The x-ray is the most important medical discovery of the last fifty years; as an aid to diag-

nosis it is indispensable and as a method of treatment its value is daily increasing. The ease with which x-ray examinations can be ordered in the hospital by the intern, who gives no thought to the expense involved, as well as the information given by the roentgen ray imbues the young physician with the idea that medical diagnosis is not possible without the x-ray. He is likely to steer his course entirely by the reports received. Such an attitude has serious dangers. In the world outside, away from the hospital, x-ray examinations are made by all sorts of men, some well trained, some ill trained. Things are read into x-ray films that do not exist. I have always urged my students to depend upon the clinical findings based on careful study if the x-ray findings are at variance, unless the study was made by a conscientious and experienced roentgenologist.

My further advice is not to make unnecessary x-ray examinations for they are expensive—someone has to pay for them.

I now come to the last phase of the patient's visit to the doctor—the advice. Putting myself in the patient's place I ask myself "what do I expect the doctor to tell me?" Should I be satisfied if he said "Have this prescription filled and take a teaspoonful in water three times a day after meals." There are innocent persons who have such an Old-World awe for the doctor that they might ask nothing more, but the intelligent American would not be satisfied. The patient expects some sort of explanation of the nature of his trouble and he does not want all hope taken away. I know of few things more cruel than the taking away of hope. Dante was aware of this when he put over the doors of his *Inferno*—"Lasciate ogni speranza ch'entrare qui"—"Leave hope behind ye who enter here." Sometimes we cannot avoid destroying hope. The patient may insist on knowing the whole unvarnished truth. It is however a trying moment for the sensitive doctor.

Advice should be explicit and specific. I need not go into details as to what these words signify. The modern doctor is often charged with being too oracular. He clings in many instances to the habit of past ages so caustically exposed by Moliere. The educated laity today want in-

formation. The doctor must be willing to give reasons for his advice. His failure to do so drives many patients into the arms of cults. A man who says, "You have a displaced vertebra," gives an explanation that satisfies even if it is irrational and untrue. If the treatment helps it naturally convinces the patient that the diagnosis was right, although we know that it does not afford such proof.

While I am speaking of treatment at the hands of cultists I want to say that we of the regular profession—ancient and honorable—must not ignore in ostrich fashion the achievements of irregular practitioners. They may have something to teach us.

In giving advice the doctor must not overlook any obscure facts that the history has revealed, and on the basis of such facts he may have to shape the patient's life for the future. Last week a woman was referred to me from another city. She felt out of sorts and discontented, yet she was not ill physically. Examination showed no organic disease but the history revealed an utterly empty life which she tried to fill with contract and cigarettes. I said jestingly to her husband "How often does she play bridge, eight days a week?" "More than that," he answered.

Medicine is of little avail in such a case; nor is it sufficient to say "Don't smoke so much, and don't play so much." Such advice is too easy and will not be heeded. What was required in that woman was to find an occupation for her, an interesting job, and that is what I dwelt on in my talk with her and in my report to the family physician.

I am nearing the end of my homily and shall add only a few words more. The doctor who cultivates the right clinical approach will enjoy his life more than any other man. He will love medicine more and more as he grows older and will give it up only when nature sets the stop sign at last against him, and he will then prove that Robert Louis Stevenson was right when he said of the doctor, "He is the flower of our civilization; and when that stage of men is done with, only to be marvelled at in history, he will be thought to have shared but little in the defects of the period and to have most notably exhibited the virtues of the race."



## BLOOD TRANSFUSION

*By*R. M. DACUS, JR., M.D.,  
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In 1616, William Harvey discovered the circulation of the blood, and in 1665, Richard Lower and Jean Denys of France were the first to successfully perform transfusion. The former experimented with dogs, and the latter performed the first human transfusion. They employed anastomosis of an artery to a vein with a cannula. Because of the large number of deaths, the procedure was pronounced illegal by the supreme court of France, and transfusion was abandoned until 1818 when revived by Blundell of England. Following the introduction of normal saline solution for intravenous therapy in 1875, the employment of blood transfusion was gradually abandoned in favor of saline.

At the beginning of the 20th century, the two chief dangers associated with blood transfusion, hemolysis and clotting, were rapidly being overcome. The phenomenon of the agglutination of human red cells by human serum was first pointed out by Landsteiner, and in 1901, he discovered three blood groups in humans. In 1907, Jansky discovered the fourth group and classified human blood. Moss confirmed his work. The microscopic test was now being employed to determine compatibility of the donors' blood and the number of deaths from transfusion was greatly reduced.

Just prior to the World War, Carrel and Crile perfected the suture of blood vessels and popularized transfusion by the anastomosis of artery to vein. Crile employed a cleverly devised cannula.

Soon afterward, Kempton and Brown introduced their paraffin-coated tubes to prevent blood from clotting when carried from donor to recipient, and Lindman began the multiple syringe method. The syringe became so popular that it practically did away with all the direct methods. Unger, in 1915, introduced a very ingenious apparatus consisting of a stopcock which alternately connected a syringe for blood from donor to recipient.

Up to this time, the success of most methods depended on the rapid transference of blood from donor to recipient in less than normal coagulation time. In 1915, Lewisohn introduced the citrate method in which he mixed the donor's blood with sufficient sodium citrate to prevent coagulation, and then gave the blood slowly as one gives i. v. saline. This method became very popular because of its extreme simplicity. Inexperienced operators could now do transfusions where it was previously limited to skilled surgeons.

In more recent years, several types of syringes have been perfected by Scannell, Jube, Head, and others, by which blood can be rapidly transferred from donor to recipient almost as easily as with the citrate method. Now, almost anyone who can perform veinpuncture can do a transfusion, and it is no longer looked upon as a complicated procedure.

At the present time, the methods most generally used are the citrate method and the syringe methods of Scannell, Jube, and Head. The citrate method is rapidly being replaced by the simple syringe methods. The Scannell is the one most widely used. In Greenville, the majority of the surgeons find the Jube syringe simpler and quite satisfactory. At present, the internes at the General Hospital are using the old multiple syringe method. In Cleveland, the paraffin tubes of Vincent are still in use. At least four persons are necessary to perform a transfusion by this method, and the vein must be dissected out in both the donor and the recipient.

Most authorities agree that the whole-blood method is preferable to citrated blood. In this method, there is less likelihood of reaction, and it is possible that the blood itself has a more beneficial effect. The most ardent exponents of the whole blood method declare that there is never a time when citrated blood is equal in therapeutic value to unmodified blood. On the other hand, Lewisohn, who introduced the citrate method, believes that citrated blood has the same clinical value as whole blood, not only in cases of shock and hemorrhage but in every form of blood disease.

Sod. citrate in the dosage used is not toxic unless the patient has an alkalosis or a low

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Read before the Greenville County Medical Society, December 1935.

serum calcium, then a condition simulating tetany may be produced. Coagulability of citrated blood is restored soon after transfusion by the union of the citrate with the calcium ions in the blood serum. Sod. citrate, being a combination of a strong base with a weak acid, produces a distinctly alkaline solution, and so tends toward alkalosis. To overcome this type of reaction, Minot and Dodd suggest the use of i. v. calcium gluconate when the citrate method is used.

Reactions with the citrate method occur in from 20 to 60 percent as compared to 10 to 20 percent with whole blood. These reactions are generally characterized by chills and temperature elevation as are sometimes seen after i. v. glucose. They are not caused by the citrate, but are very likely due to some foreign protein or to chilling of the blood. In the citrate method, there is a much greater possibility for contamination as the blood comes in contact with the air and has to be stirred in a graduate to prevent coagulation. It must also be filtered through gauze, being transferred from one receptacle to another before being given i. v. Lewisohn showed that, by boiling the apparatus in sodium hydroxide and using triple distilled water, reactions can to some extent be reduced in number. The only advantage that citrated blood has over whole blood is the ease with which it can be given. The technique is simpler for the inexperienced physician.

More serious reactions than chills and fever may follow transfusion. They are practically always due to the use of incompatible blood. They are: petechia, hemoglobinuria, urticaria, jaundice, and allergic reactions. Convulsions, coma, and death may result. At the beginning of a transfusion, any one of the following danger signs should stop the transfusion: facial erythema, cyanosis, feeling of tightness in the chest, dyspnea, precordial pain, short dry cough, epigastric pain, nausea and vomiting, or petechiae. The typing and matching of blood should be done only by an experienced and competent person. It is not necessary to type the recipient or donor if the bloods are cross matched. Even if typed, the blood should be cross matched. That is: the cells of the donor should not be agglutinated or hemolyzed

by the serum of the recipient, nor should the serum of the donor agglutinate the cells of the recipient. Some clinics only match the donors' cells with the recipient's serum; you may or may not get a reaction if the donors' serum agglutinates the recipient's cells. This practice is dangerous.

Indications for transfusion: Acute anemia from hemorrhage is an emergency indication for transfusion. Blood volume can be temporarily restored by i. v. saline or gum acacia, but only blood can restore the oxygen carrying capacity. A rapid reduction of blood volume to a point below 75 percent of normal leads to serious symptoms. Conditions producing acute anemia from hemorrhage include: traumatic injuries, postpartum hemorrhage, ruptured ectopic pregnancy, incomplete abortion, pulmonary hemorrhage, and bleeding peptic or typhoid ulcers.

In many cases of chronic secondary anemia, transfusion is often indicated. For example, anemia following loss of blood in small amounts over a long period of time, as with fibromyoma of the uterus or bleeding hemorrhoids. Anemia may be secondary to chronic suppurative conditions, such as osteomyelitis, empyema, or pelvic peritonitis, or it may be secondary to a malignancy. Transfusion is often a valuable pre-operative procedure. Not even a minor operation should be performed with the hemoglobin below 50 per cent. In septicemia, the only indication for transfusion is anemia. Attempts to supply leukocytes and antibodies by transfusion have failed.

In several blood dyscrasias, transfusion is indicated. In purpura hemorrhagica, transfusion may be necessary to raise the platelet count of the blood to stop hemorrhage. The numerical increase in the blood platelets is often of very brief duration. The life of the blood platelet is about four days, and for this reason, frequent transfusion may be necessary. In hemophilia, the blood platelets are of defective quality. In this disease, moderately large transfusions may be necessary to supply sufficient platelets with normal coagulative power to stop hemorrhage. In hemorrhagic disease of the newborn, and in obstructive jaundice, transfusion may be indicated to supply fibrinogen, calcium, or other humoral elements necessary for



proper coagulation. In severe hemolytic jaundice and in the leukemias where there is marked anemia, transfusion is also indicated.

The amount of blood given depends on the condition for which transfusion is done. Acute hemorrhage requires a relatively larger amount of blood, from 500 to 800 c. c. being given in one or two transfusions. The average amount given at a single transfusion is 400 c. c. Donors can spare 400 to 500 c. c. without ill effect. Benefits from blood transfusion are usually greater than one would expect from simple replacement. This is attributed in part to stimulative action on hemapoiesis. Some cases of long-standing chronic anemia seem to become established on a low level with little blood production. In these cases, transfusion may bring about sharp improvement with a renewal of hemapoiesis. It is believed that small transfusions have a stimulative action on the bone marrow while large ones may depress it. Small transfusions of 100 to 200 c. c. are gaining in popularity.

In children, the amount of blood depends upon the weight of the child and the degree of dehydration. Children are often transfused for nutritional disturbances such as athrepsia and anhydremia. Dehydrated patients can be given larger amounts of blood than those with normal blood volume. Infants tolerate a relatively larger amount of blood than older children. A rule similar to Young's Rule for drug dosage may be used. It is: Weight of the patient divided by the weight plus 40 multiplied by 400 c. c. equals the amount to be given.

In children, transfusion may be difficult because of small veins. This can generally be overcome, however, if the great saphenous vein is exposed at the ankle by an incision just medial to the internal malleolus. The distal end of the vein is ligated and the vein cut half into with sharp pointed scissors. A cannula is then introduced into the vein and tied in place. Blood then can be given either by the direct or citrate method. In infants, blood may be given into the longitudinal sinus by puncture through the anterior fontanel or the jugular vein may be used. If both of these methods fail, blood may be given intraperitoneally or intra-muscularly. Blood given intraperitoneally must be typed. It

may be citrated or whole blood. Intra-muscular blood need not be typed. Experiments in which bird blood was injected into the peritoneal cavity of dogs proved that a portion of the blood appears in the circulation soon after injection. Intra-muscular blood may be given daily until a suitable rise in blood elements occur. It will reduce coagulation time and has been used to stop hemorrhage from mucous membranes. Da-Costa has noted a rise of 5 per cent hemoglobin and 400,000 red cells three days after the injection of 20 c. c. of blood.

Auto-transfusion has been successfully employed in cases of intra-abdominal hemorrhage and in hemothorax. The blood is taken from the abdomen or thorax, filtered through gauze, and injected intra-venously. The blood may or may not be citrated. Ruptured ectopic pregnancy is a frequent condition that affords an opportunity to employ this procedure.

Dr. Judine, a Russian physician of Moscow, has recently experimented with transfusions of blood from dead persons. He finds that blood remains viable and unclotted up to eight hours after death. He draws the blood soon after death, citrates it, and after proper typing and serologic examination, gives it intravenously to patients in need of transfusion. Citrated blood may be kept on ice for many days and warmed just before being given.

Transfusion now has a definite place in medicine as a therapeutic agent. Advances have also been made in liver and iron therapy in treating certain forms of anemia, most notably pernicious anemia and hypochromic microcytic anemia; so that the physician must consider each case carefully to determine when transfusion is really indicated.

The citrate method is an accepted method of transfusion, being used exclusively in many large clinics; however it is a more dangerous procedure than the whole blood method because there is much more likelihood of contamination and reactions occur more frequently with its use. On the other hand the citrate method is simpler and easier to perform.

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## RIDGE MEDICAL SOCIETY MEETING

The Ridge Medical Society met the nineteenth of December, 1935, at seven o'clock in the evening with a good attendance including our visitors, Dr. George McCutchen of Columbia and Dr. W. P. Turner and Dr. C. H. Blake of Greenwood.

Dr. W. P. Timmerman reported a case of infection in a parturient woman twenty years of age who has seven living children and who within three days after delivery became seriously ill.

She was examined by five other physicians.

She had severe pains in each groin and right leg with evidence of inflammation and after two months an abscess formed above pubis which was incised and after three months of illness seems about well.

This case elicited considerable discussion by various ones.

Dr. Blake reported a case of haematoma of the vagina.

Dr. Wise reported a case of a man with an abscess above the pubis.

Dr. Turner reported a case of appendiceal abscess in the femoral ring.

Dr. King reported a case of puerperal infection which ended fatally.

Dr. Ballinger reported a case of forceps being left in the abdomen during laparotomy.

Dr. Turner made an interesting address on kidney lesions with their varied manifestations, symptoms, treatments, results and the tests for

making the diagnosis.

This elicited much discussion and commendation.

Dr. McCutchen gave an interesting and instructive address on hyperinsulinism, with special emphasis on the diagnosis, cause and treatment.

He was highly commended for his address.

We regret the continued indisposition of Dr. J. D. Waters of Saluda, S. C.

Supper was served in The Batesburg Hotel where good fellowship reigned and much merriment ensued.

Dr. Blake spoke of his early association with our society and highly commended it for its endeavor to secure sketches of various doctors who have lived in this section.

He lauded too highly the secretary.

Dr. R. H. Timmerman told the society that Dr. John Gorrie of this state was the first to make artificial ice successfully.

Dr. Turner said that Dr. Gorrie once lived in Greenwood.

It was also stated that Dr. J. Walter Hill of Edgefield was the first doctor in South Carolina to successfully perform the Cæsarian operation. The mother and child both lived and the operation was performed in the woman's home.

The Ladies Auxiliary was delightfully entertained in the home of Mrs. E. C. Ridgell.

Mrs. Dr. Geo. McCutchen of Columbia was one of the guests.

W. P. Timmerman, Secretary.

F. G. Asbill, M.D., Acting President.



# THE JOURNAL

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FEBRUARY, 1936

PROGRAM FOR GREENVILLE MEETING APRIL 21,  
22, 23 ABOUT COMPLETED

A meeting of all of the local committees, the Program Committee and the Officers of the State Medical Association, has just been held in Greenville and all of the arrangements for the coming meeting considered.

The scientific program has been filled and so

announced by Dr. George R. Wilkinson, Chairman, Greenville, S. C. For several years the plan has been to limit the number of papers on the program to about fifteen exclusive of invited guests and addresses of officers. Every effort has been made to provide a program of wide general interest to the medical men of South Carolina. The specialties have a place but for the most part the program is designed to enrich the knowledge of the general practitioner. Dr. George W. Crile of Cleveland, Ohio, Professor of Surgery Emeritus, Western Reserve School of Medicine will deliver the address in Surgery. Dr. Crile is one of the world's most famous men. The address in Medicine will be delivered by Dr. W. B. Porter, Professor of Medicine at the Medical College of Virginia, Richmond. Dr. Porter is an internist well known throughout the country.

The entertainment features this year will reflect the splendid hospitality of the city of Greenville. Owing to the death of our President during the Christmas Holidays the President's reception and ball will not be held. There will be a dinner on the evening of April 22 for all the members of the Association. At this dinner a speaker of note will be invited to address the Association on some subject of commanding interest. This dinner will take the place of private dinners by individual members of the Greenville County Medical Society.

The Woman's Auxiliary will have their own programs as usual and a large attendance is expected at their meetings.

The Poinsett Hotel will be Headquarters for the Association. Among the other Hotels are the Imperial and the Otteray. The total attendance should be about five hundred including the Woman's Auxiliary and the Public Health Association.

#### THE SIMS MONUMENT DESECRATED

It was noted in the public press recently that the monument erected by the South Carolina Medical Association, the Woman's Auxiliary and the State of South Carolina on the State House grounds in Columbia as a lasting memorial to the great fame of Dr. J. Marion Sims had been damaged by vandals. The Secretary-Editor and one of the past Presidents of the

Association visited the monument to observe the damage. It was found that the eyes had been gouged out and some of the lettering on

the monument destroyed. We are advised that prompt action will be taken to restore the monument to its original beauty.

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## SURGERY

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WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

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### "REDUCTION OF HERNIA EN MASSE"

The reduction of an incarcerated hernia generally removes the danger of strangulation which there-to-fore was imminent. That this is not always the case it is well to bear in mind, for the reduction may occur in such a manner that strangulation almost invariably ensues unsuspected under cover of the abdominal wall. This is known as reduction en masse. While not common, it occurs sufficiently often to warrant our being familiar with it so as to recognize it when present. In this regard it will be well to review an article by Dr. Louis H. Nason and Dr. Charles G. Mixter in which they report five cases of their own, drawing some conclusions from them. (J.A.M.A. 105:1675, Nov. 23, '35).

The reduction of hernia en masse occurs more commonly in males, on the right side, and in the inguinal rather than the femoral region. It is important to note that for such a false reduction to take place it is not necessary that the attempts at taxis be forceful. In one case the hernial mass disappeared spontaneously and in

another the patient himself made the "reduction" with little effort. The sac with its contents is forced within the abdominal cavity between the muscle layers and the parietal peritoneum into the so called properitoneal space. For such a situation to take place several factors must obtain. The sac must be sufficiently developed to admit abdominal contents and its neck not so large as to permit their easy escape. The sac must lie loosely in the hernial canal. The neck of the sac and the surrounding peritoneum must have sufficient mobility so as to permit their being displaced allowing the reduced mass to occupy a properitoneal position.

The effect of such a false reduction is almost invariably strangulation of the contents of the sac. This may follow immediately or only after a few days. The picture is misleading unless the condition is suspected, as there is no mass in the hernial region. The case becomes one essentially of strangulation and obstruction of the small intestine. The treatment is by operation through an abdominal incision.

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### MARLBORO COUNTY MEDICAL SOCIETY

The Marlboro County Medical Society held its Annual New Year's Meeting and Banquet Friday afternoon, January 10, 1936, at 5:00 o'clock in the Masonic Temple, Bennettsville, S. C. The following program was carried out:

1. The New Year and the Doctor—Dr. Edgar A. Hines, Sec. S. C. Med. Assoc., Seneca, S. C.

2. Submucous Fibrosis in the Urinary Bladder—Dr. William R. Barron, Columbia, S. C.

3. Riedel's Thyroiditis—Dr. Roy B. McKnight, Charlotte, N. C.

Dinner in Banquet Hall.

4. Newer Methods in the Study and Treatment of Food Allergy — Dr. Warren T. Vaughan, Richmond, Va.

Bennettsville, S. C.

Dr. D. D. Strauss, Sec.



## EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

Agranulocytosis frequently occurs in such a severe form and in such numbers that an insight into its etiology with a view of decreasing its incidence is of great value.

An article in the Journal of the American Medical Association by Drs. Kracke and Parker gives much of value on the etiology. (The Relationship of Drug Therapy of Agranulocytosis; Drs. R. R. Kracke & F. P. Parker; Jour. A. M. A., Sept., 1935, p. 960).

"Agranulocytosis may be defined as a disease in which essentially, there is a marked diminution, or total absence, of the granulocytes of the peripheral blood, which is followed by loss of cellular resistance and this, in turn followed by infectious processes of various types. Although the basic pathologic change is a neutropenia of the peripheral blood, the underlying pathologic process in the bone marrow has not been completely worked out. It seems, however, that there is a hypoplasia of granulocytic elements in the bone marrow and it is our purpose in this paper to determine from available evidence whether or not these changes are caused by the use of certain drugs."

The etiology was discussed from a bacteriological viewpoint and from the viewpoint of a dietary deficiency, as of Vitamin G.

Menstrual coincidence, was thought to be a factor but it was found that the taking of drugs, as Cibalgine for the menstrual pain was the real cause. But they discuss the etiology mostly from the viewpoint of chemicals and drugs. As to the chemicals, industrial benzene poisoning is a frequent cause; as to drugs, they mention many; as:

Acetphenetidin, amidopyrine, nearsphenamine, certain gold salts; as crisalbine, dinitrophenol, neotibosan, acetanilid, antipyrine, aspirin, quinine, and arsenical compounds (but it should be remembered that the organic arsenical products are composed mainly of double benzene ring structure). They doubt the potency of

some, as aspirin; so they say that in a summary of the cases of agranulocytosis, following the administration of drugs, it seems that at least four different classes of drugs can be incriminated. The are amidopyrine, dinitrophenol, gold salts, and organic arsenical compounds.

In these drug cases a certain susceptibility to the adverse action of the drug must be assumed to account for the small number of people affected in proportion to the large number of people that use the drugs. But certain of the oxidation products of the incriminated drugs have a depressing effect in the bone marrow and are thus capable of producing granulocytopenia. Hetz attributes the injurious action to the pyrazolon group, which is found mainly in amidopyrine, and it is from chemical reasons likely to be an erythropoietic depressant. Others believe that it is the benzene ring in some drug that causes the agranulocytopenia, from the ease of oxidation of the drug. The inclusion of barbiturates does not seem to be justifiable in spite of cases reported by the Mayo Clinic.

Since amidopyrine is so often the causative factor of agranulocytopenia, some recommendations seem in order and have in places proved to be of value.

"It seems desirable that amidopyrine should be dispensed only by physicians in nonrefillable prescriptions, so that this danger of agranulocytosis may be largely removed from the unprotected public. Furthermore, it seems that every physician should prescribe amidopyrine with caution and he should not follow the careless custom of giving a patient a prescription for relief of pain with such indefinite directions as to have it refilled whenever the patient chooses to do so.

Amidopyrine is admittedly a valuable drug but the leukocyte count should be checked from time to time to determine whether or not there is bone marrow depression."

## PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 303 (29642, Dec. 6, 1935)

*Case of Drs. Richards and Hoshall*

Student Rutledge (reading):

A Negro male, stevedore, age 24 yrs., admitted 6-20-35, died 10-25-35.

Onset in March 1935 with sharp intermittent pains in lower lumbar region, not affected by rest although worse on exertion. In May developed less severe pains in right hip, which radiated down the anterior portion of the thigh to the knee. Unable to lie on right hip due to pain. Right knee has been sore and swollen since onset. Has had a high fever almost every day since onset, and has lost about 25 lbs., although the appetite is good. No previous joint complaints. Past Illnesses: Penile sore (1926), Neisserian infection (1928). Had tonsillitis "once." No history of pleurisy, pneumonia, or tbc. Review of the systems reveals only constipation and nocturia (3-4). Family History: "No tbc., heart disease or insanity."

Examination: A thin and undernourished male, temp. 101, pulse 100, resp. 24 per minute, B.P. 100-70. Depigmented areas noted about face. Eyes, ears, nose negative. Teeth carious. "Throat red." Epitrochlear glands palpable. Chest: Expansion equal. Breath sounds distant. Few fine rales in mid-portion of rt. lung anteriorly, disappearing on deep breathing. Scoliosis of left side ("Probably due to fixation of structures around right hip"). Mediastinum neg. Heart: Apex in 5th interspace, 2 1-2 inches from midline. Regular in rhythm, rate increased, no murmurs or arrhythmias. Abdomen: flat, no organs or masses palpable. No penile discharge. General atrophy of muscles of lower extremities, more on right. Rt. leg flexed. Pain on palpation of rt. hip, over greater trochanter. "Flexion of leg of 130 degrees. Limitation of abduction, adduction and flexion of thigh. Some pain on motion of patella and structures around knee joint. No effusion noted. Tenderness along

rt. femur." Transient ankle clonus on left, no other abnormalities of reflexes.

Lab: Urine completely neg. (2 exams.) except for 1-5 leukocytes per HPF. Blood (6-20-35, 10-3-25) Hb. 55 per cent(D), 50 per cent(T); WBC 6850, 20,000; polys 73 per cent, 84 per cent; lymphs 27 per cent, 15 per cent; achromia, anisocytosis, 1 plus; RBC -, -. Blood Kolmer and Kline 4 plus. Culture "from rt. femur" (7-25) staphylococcus present. Culture "from rt. hip joint" (7-11), (7-17) neg. Blood culture (6-25) neg. X-ray of chest, lumbo-sacral spine, pelvis (6-21): See chart. Mantoux 1 plus. Biopsy of femur (10-3) "Osteomyelitis of femur."

Course: Temp. showed daily afternoon rise, usually to 103, with drop during night, usually but not always to normal. This continued relatively unchanged until day of death when it fell gradually to 95 just before death. Pulse followed temp. closely. Resp. 20-36, showing no consistent tendency to rise or fall. Was placed on Bradford frame, skin traction applied. Hip-joint opened and drained on 7-11; thick greyish pus obtained. No subsequent improvement. On 7-25 was incised again, drill holes placed in trochanter from which "purulent material" was obtained. Decubitus ulcers appeared over sacrum in July, continued. No improvement. Moderate drainage from incisions. Incised again on 9-25 and 10-3, with no subsequent improvement. Given 3 blood transfusions. Gradually became weaker, decubitus ulcers enlarged and became deeper. Became unable to swallow a few days before death, gradually expired on 10-25-35.

Dr. Robert Wilson, Sr. (conducting): I understand that you all saw the autopsy, so I wouldn't be surprised if we have a unanimous verdict today. Mr. Keels, will you open the discussion?

Student Keels: The history of gradual onset of symptoms referable to the hip joint, with progressive limitation of motion, and with fever, suggests tuberculosis of the hip-joint.



The family history is negative for tuberculosis, but we cannot attach any importance to that; the important thing is, was there exposure to the tubercle bacillus? The answer is not recorded. The joint was first incised and drained on July 11th. Two weeks later, the first culture was taken. That the staphylococcus was recovered at that time is not surprising; secondary infection had then had time to become established, and an osteomyelitis of pyogenic nature was probably present at that time, as well as the older tuberculosis. When the biopsy was taken, almost three months after the original operation, it is only natural that the condition should then appear to be an osteomyelitis of the usual, non-tuberculous form.

I have read that 80 per cent of the deaths in cases of bone tuberculosis are due to a terminal miliary tuberculosis, so, at least on the basis of probabilities, that is my opinion as to the method of exitus, although there is little on the chart to suggest it. On the other hand, pyogenic infection, either from the secondary pyogenic infection of the hip, or from the numerous decubitus ulcers, could have given a septicemia as the immediate cause of death.

Dr. Wilson: Mr. Settle, do you agree?

Student Settle: Yes, I agree with Mr. Keels in the main, but I do not believe that secondary infection with septicemia was the mode of death. I believe that he died from generalized miliary tuberculosis. He had been progressively losing weight, had become quite anemic, and his temperature curve had followed the course that is rather typical for miliary tuberculosis. His chest findings on admission were also slightly suspicious.

Dr. Wilson: But couldn't the weight loss, the fever and the anemia all have been caused by the secondary infection?

Student Settle: Yes, I guess they could have.

Dr. Wilson: Mr. Gasner, can you add something?

Student Gasner: I believe that the case for secondary infection is stronger than has been made out. The terminal leukocytosis would be hard to explain on any other basis. Can we see the x-ray now?

Dr. Lynch (demonstrating x-rays and reading excerpts from the x-ray reports): "There

is a definite clouding of the right hip-joint, but no definite bone destruction has taken place as yet. There is also slight irregularity in the shape of the 4th and 5th lumbar vertebrae, but as there is no evidence of bone erosion, this is taken to be a congenital anomaly. The chest is clear."

Dr. Wilson: With the x-rays now before you, would anyone like to add something further, or to change an original impression? (No answer) Dr. Prioleau, would you care to discuss the case?

Dr. Prioleau: The diagnostic part of the case seems to me to have been adequately covered, but I would like to call your attention to the bed-sores. In many cases of joint disease, not alone the tuberculous ones, bed-sores occur, and they may even become then the most important and dangerous part of the case, as has been frequently demonstrated at these conferences. All precautions should be taken to prevent their occurrence in such cases, and once they have appeared, they should be treated.

Dr. Lynch: No one has commented on the symptoms in the knee.

Dr. Wilson: Mr. Gasner, what do you think of that?

Student Gasner: I think that must have been a referred pain. On examination, the joint was not found to be swollen.

Dr. Lynch: And wouldn't someone like to explain why he couldn't swallow for the last few days?

Dr. Wilson: Mr. Cantey, you explain that.

Student Cantey: I think he was just so run down he couldn't swallow, or maybe he didn't want to. That is not uncommon on the last day or two before death from any illness.

Dr. Wilson: The working diagnosis recorded on the chart by the examiner who saw him on admission was tuberculosis of the hip. Later that was changed to acute arthritis of the hip.

Student Rutledge: I think the diagnosis was changed on the basis of two completely negative results with the Mantoux test, and a subsequent one-plus test, as recorded on the abstract.

Dr. Wilson: The Mantoux test is not uncommonly negative in a case of overwhelming tuberculous infection.

Dr. Lynch: I am sorry that Dr. Hoshall could not be here today to discuss his case, but he has been detained in the dispensary.

I do not doubt that the biopsy report on this case was one of the factors to cause the diagnosis to be changed from tuberculosis. And that brings out one of the points of this case: any laboratory report should be considered in the light of the pertinent clinical data at hand. In such a case, with an open, draining sinus communicating with the bone for three months, nothing else could have been anticipated from a biopsy, unless taken very deeply; a biopsy taken at the first operation would probably have revealed the true condition.

There was an extensive tuberculosis of the head of the femur, with erosion into the joint. As you can see here (demonstrating autopsy specimens), the articular surface is completely eroded away, and the surface of the bone left appears fussy and mossy. There is extensive destruction of this area, and considerable granulation tissue formation. There is an apparent shortening of the neck of the femur, from erosion of the head as a result of friction; this is also quite characteristic. The acetabulum was similarly eroded, and there was extensive destruction of the margins of the joint. The base of the acetabulum was completely eroded through.

Such a condition is necessarily a blood-borne infection. The bacilli usually lodge in the bone proper, at the epiphysis, and then, as the head of the bone becomes caseous, the joint becomes involved, and later still, the other bone composing the joint. Occasionally tuberculosis is primary in the joint itself, but that is quite rare.

The oldest tuberculous lesion in this case was apparently in the mediastinal and mesenteric lymph nodes, and hence the original infection may have been either via the respiratory tract or the intestinal tract. There were no recognizable lesions of the parenchyma of the lungs or in the intestines at the time of death. In the bone tuberculosis of children, the bovine bacillus is commonly the infecting organism, rather

than the human bacillus. Since this organism almost always enters by the intestinal tract, it is not uncommon to find the mesenteric lymph glands showing the oldest lesions. In this case, caseation is more evident microscopically than is the cellular response, and that inclines me somewhat towards the possibility of a bovine infection in this case, that appearance being the usual one in bovine tuberculosis.

This man died of a generalized miliary tuberculosis. I don't know whether those of you who argued for miliary tuberculosis did so because you remembered the autopsy or not, but you should have been able to support your case better. A patient who has tuberculosis, and who dies during the course of active tuberculous infection, usually dies from tuberculosis, and that usually in a miliary form, at least in the last analysis. Even cases of chronic tuberculosis commonly terminate in this way, as you saw in an interesting autopsy this morning. Of course secondary infection could have been the fatal factor here, but that would have been much more unusual.

Student Gasner: How do you explain the pain in the knee?

Dr. Lynch: There was nothing in the autopsy to explain it.

Dr. Chamberlain: Pain in the knee is given by the older authors as one of the earliest symptoms of tuberculosis of the hip-joint. It is thought that the pain is a referred pain, probably transmitted along the saphenous nerve.

Dr. Wilson: I often wonder if we couldn't come much nearer the correct diagnosis than we do by going into the history in more detail. I always note that when the symptoms are all referable to one area, there is a tendency to deal skimpily with more remote parts of the body. In this case, the suspicion of tuberculosis, that was evidently in the examiner's mind, should have brought careful questioning as to respiratory symptoms, possibly at some remotely distant time. With such information at hand, it would probably have been very hard to convince the examiner that the condition was not tuberculous.



## WOMAN'S AUXILIARY

### SOUTH CAROLINA MEDICAL ASSOCIATION

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### REPORT TO THE WOMAN'S AUXILIARY OF THE SOUTHERN MEDICAL ASSOCIATION

Greetings from South Carolina the state which is at present busy trying to double its Student Loan Fund!

Four years ago the Board realized that a common objective for which all units could work would probably serve better than anything else to maintain the interest that sometimes wanes after organizations, so the humane project of building up a fund for the use of doctors' sons and daughters who lack sufficient money to complete a course at Medical College was begun. The work is so very worth while and has met with such signal success in South Carolina that I should like to outline our schedule of requirements for the use of the fund hoping some other states will adopt a like plan.

Each Auxiliary is assessed \$1.00 per paid up member yearly in addition to any other donation which it cares to make. The applicant for the use of the fund may secure \$250 a year for four years, without interest, upon presenting proper credentials as to character, scholastic records,

etc., and a note bearing an acceptable endorser. After graduation and internship the recipient agrees to begin payment on the loan by monthly installments, a course which one beneficiary is following at this time.

At present there is a sufficient sum on hand for the founding of one scholarship and the State President and Student Loan Fund Chairman, Mrs. L. O. Mauldin of Greenville have high hopes of so materially increasing the amount this year that we shall be able to establish a second scholarship by September.

In addition to this drive, the State Organization Chairman has placed applications before several Medical Societies asking permission to expand, and more important still, is trying to keep alive the Auxiliaries already formed. It is very discouraging to labor over the organization of a unit only to have the joy of expansion offset by the death of an established branch, a situation which is constantly arising in this state.

Preparation of biographies of deceased doctors of South Carolina has progressed with much interest and while we anticipate that considerable time will be required for the completing of necessary data, we expect when it is completed to publish the material in book or pamphlet form.

We appreciate the privilege of contributing this letter and hope to have real news when the time comes for presenting the next one.

Our State Convention will be held April 21-22-23 in Greenville.

With best wishes for a successful Auxiliary year to all states affiliated with the Auxiliary to the Southern Medical Association, I am,

Most Cordially,

Mrs. Clarence E. Owens, President, of the  
Auxiliary to the S. C. Medical Association.

Mrs. E. Clay Doyle, Seneca, S. C., Chairman  
of Publicity of the Auxiliary to the S. C. Medical Association.

## SOUTH CAROLINIANA

J. I. WARING, M.D., CHARLESTON, S. C.

Pediatric Training Yesterday and Today—D.

L. Smith, Spartanburg—Sou. M. J. 28 Dec. 1935—1138. A sketch of the development of present day facilities for training in pediatrics, with a description of the Southern Pediatric Seminar held at Saluda, N. C.

John Gorrie: H. M. Taylor, Jacksonville, Fla.

Sou. M. J. 28 Dec. 1935—1075. The life of a Charlestonian who later became a Floridian, inventor of an ice-making machine and father of modern air-conditioning.

Well Leg Traction as an Aid in the Correction of Some Stereotyped Orthopedic Deformities

—J. W. White, Greenville. Sou. M. J. 29 Jan. 1936—45. A discussion of principles involved and the application in various conditions.

An Instrument Facilitating Use of the Flanged Nail in Treatment of Fractures of the Hip.

—J. W. White, Greenville. J. of Bone & Joint Surgery. 17 Oct. 1935—1065. A description of this simple instrument.

The Football Knee—J. W. White, Greenville.

The Journal-Lancet 55 Dec. 1, 1935—773.

The author finds this due usually to damaged cartilage or free bone which has been scaled off, and discusses treatment, with a leaning well to the conservative side.

Experiences with Well Leg Traction Apparatus

—J. W. White, Greenville. Sou. Surg. 4 Dec. 1935—396. An illustrated article describing the use of this method in scoliosis, dislocation of one innominate bone, dislocated hips, ankylosis of the hips, intertrochanteric fractures, fractures of the femoral shaft.

Femoral Shortening for Equalization of Leg

Length—J. W. White—Greenville. J. of Bone & Joint Surg. 17 July 1935—597. Illustrated description of technique and favorable results in a series of 45 cases.

Enteric Cysts—O. B. Mayer, Columbia. Ann.

Int. Med. 9 Dec. 1935—797. An illustrated case report of this rare condition in a twelve-year old boy who recovered from operation.

Infections of the Terminal Digital Phalanx—

W. H. Prioleau, Charleston. Sou. M. & S. 97 Mar. 1935—127. A short discussion of diagnosis and treatment.

## NEWS ITEMS

*Rates of Greenville Hotels for State Association Meeting*

*The Poinsett:*

Single rooms—\$2.50 to \$3.50 per day.

Double rooms—\$3.50 to \$6.00 per day.

All rooms have private bath.

*The Otteray:*

Single, without bath—\$1.50.

Single, connecting bath—\$2.00.

Single, private bath—\$2.25 and \$2.75.

*The Imperial:*

Single without bath—\$1.50.

Single with bath—\$2.00 and \$2.50.

Double without bath—\$2.50 each person.

Double with bath—\$3.00 and \$3.50 each.

Double with connecting bath—\$2.50 and \$3.00 each.

Dr. Kenneth M. Lynch, Charleston, has been appointed a member of the Council of the Southern Medical Association from South Carolina for a regular Council term of five years, the appointment having been announced recently by the President, Dr. Fred M. Hodges, of Richmond. Dr. Lynch succeeds Dr. Frank H. McLeod, of Florence, who having served the constitutional limit, was not eligible for reappointment.



## SOCIETY REPORTS

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### MINUTES OF THE REGULAR ANNUAL MEETING OF THE MEDICAL SOCIETY OF SOUTH CAROLINA, HELD ON TUESDAY EVENING, DECEMBER 10th, 1935, at 8:30 O'CLOCK, AT THE FORT SUMTER HOTEL

The meeting was called to order by the President, Dr. Francis B. Johnson.

The Roll was called, there being fifty-three members present.

Guests included members of the faculty of the Medical College, members of the Medical Corps of the Navy Yard and Fort Moultrie, and visiting physicians.

The Minutes of the meeting of November 26th were read and confirmed.

The Secretary moved that in view of the fact that the second meeting for December falls on Christmas Eve, it be dispensed with.

This was seconded and carried.

The election of Officers was then taken up, with the following result:

President: Dr. W. Atmar Smith;

Vice-President: Dr. J. Austin Ball; Drs. J. J. Ravenel and Hillyer Rudisill having requested that their names be withdrawn.

Secretary-Treasurer: Dr. Joseph I. Waring.

Librarian: Dr. W. C. O'Driscoll.

Commissioner of Roper Hospital: Dr. G. McF. Mood;

Member Board of Censors: Dr. Edward Rutledge;

Delegate to the State Association: Dr. Robert Wilson, Jr.

Alternates: Drs. P. G. Jenkins and Paul W. Sanders withdrew their names, and the following were elected: Drs. John C. Beckman, A. J. Buist, Jr., T. H. Martin, E. W. Townsend, I. R. Wilson, Jr.

Honorary Fellow: D. J. Sumter Rhame.

Dr. F. G. Cain stated that a vacancy had occurred in the office of Attorney for the Society as a result of Mr. George H. Moffett having

relinquished his practice; and moved that the Secretary communicate with Mr. Moffett and thank him for his services in the past, and explain to him that his position will have to be filled.

Dr. Edward Rutledge moved for the election of a new attorney, and nominated Mr. Arthur R. Young.

Dr. Jervey Ravenel nominated Mr. Thomas P. Stoney.

Dr. A. J. Buist suggested that due to the fact that Messrs. Hagood, Rivers & Young were handling letters for the Society in connection with the Ross Estate, and were familiar with the Society's affairs, he believed that it would, therefore, be better to elect the firm to act as legal representatives of the Society.

Dr. Rutledge accepted Dr. Buist's nomination of the firm of Hagood, Rivers & Young as a substitute motion.

Dr. Ravenel then nominated the firm of Stoney, Crossland and Pritchard, withdrawing his previous nomination of Mr. Stoney.

Ballots were cast, and the firm of Hagood, Rivers & Young were elected as Attorneys for the Society.

Dr. Mood moved that in advising this firm of their election as the Society's legal advisors, that they be requested to have Mr. Young handle the affairs of the Society.

The President then had the newly elected officers conducted to their chairs. He then spoke briefly of his pleasure in serving as President, and reviewed the chief events of his term, particularly the discussion of Health Insurance and the visit of Dr. Bierring.

Dr. O'Driscoll moved that the Secretary send a letter of appreciation to Dr. Johnson.

This was seconded and carried.

The President, Dr. Smith, spoke a few words expressing his pleasure in taking his new office.

The meeting then adjourned.

J. I. Waring, M.D., Secretary.

## NEWS ITEMS

### PROGRAM OUTLINE OF THE SOUTH-EASTERN SURGICAL CONGRESS, NEW ORLEANS ASSEMBLY

March 9-10-11, 1936—Following Mardi Gras

If you have never attended one of these assemblies you will have missed something. The New Orleans assembly should be the best one. Don't miss it. Three full days. Doing something every minute. Mid-day round table discussions — Night session Monday — Banquet Tuesday.

The following men will appear on the program with papers and clinics:

Dr. Arthur W. Allen, Boston, Mass.  
 Dr. Roger Anderson, Seattle Wash.  
 Dr. Charles O. Bates, Greenville, S. C.  
 Dr. W. T. Black, Memphis, Tenn.  
 Dr. O. P. Board, Birmingham, Ala.  
 Dr. Guy Caldwell, Shreveport, La.  
 Dr. Thomas E. Cormody, Denver, Col.  
 Dr. Virgil S. Counseller, Mayo Clinic.  
 Dr. George W. Crile, Cleveland, Ohio.  
 Dr. Roger G. Doughty, Columbia, S. C.  
 Dr. John F. Erdmann, New York, N. Y.  
 Dr. Edgar Fincher, Jr., Atlanta, Ga.  
 Dr. Paul G. Flothow, Seattle, Wash.  
 Dr. Emmerich von Haam, New Orleans, La.  
 Dr. W. D. Haggard, Nashville, Tenn.  
 Dr. Arthur Hertzler, Halstead, Kan.  
 Dr. Gerry Holden, Jacksonville, Fla.  
 Dr. C. C. Howard, Glasgow, Ky.  
 Dr. Chevalier Jackson, Philadelphia, Pa.  
 Dr. Harry H. Kerr, Washington, D. C.  
 Dr. Joseph E. King, New York, N. Y.  
 Dr. Francis E. Lejeune, New Orleans, La.  
 Dr. Jennings Litzenberg, Minneapolis, Minn.  
 Dr. James S. McLaster, Birmingham, Ala.  
 Dr. Fred Rankin, Lexington, Ky.  
 Dr. J. U. Reaves, Mobile, Ala.  
 Dr. Curtice Rosser, Dallas, Texas.  
 Dr. Alfred A. Strauss, Chicago, Ill.  
 Dr. A. Street, Vicksburg, Miss.  
 Dr. J. W. Tankersley, Greensboro, N. C.  
 Dr. Alan C. Woods, Baltimore, Md.

If you do not receive a program by the first of March write for one—Dr. B. T. Beasley, Atlanta, Ga.

From Herald & News, January 9, 1936:

Dr. T. H. Pope and Dr. J. K. Wicker brought an appeal from the Newberry County Medical association that the county delegation use their influence in having the state appropriation for the South Carolina Medical school raised. The amount as stated in the budget for 1936-37 for the medical college would reduce the rating of the school from an "A" college to a "B" college. This would mean that those men who are now there and who will finish cannot stand examinations anywhere outside of South Carolina, they cannot be interned in any hospitals outside the state, or practice anywhere only in South Carolina. Neither can they compete for any United States medical job, all because they will be graduates of a "B" standard college. Dr. Pope quoted from an editorial in The State on Dr. S. E. Harmon, who said we would rather have no medical college than a "B" standard college. South Carolina would be the only state in the Union with a "B" standard medical college. Dr. Wicker said that other medical colleges have large endowments, which the College of Charleston does not have, and as it has high standards, and many men who have graduated there have become famous in their lines, we should try to keep it as it is. It is one of the oldest medical colleges in the United State, only three being older.

### Important to Your Babies!



Larsen "Freshlike" Strained Vegetables are first quality garden fresh vegetables cooked, strained and sealed under vacuum to protect vitamins and mineral salts. For further protection we seal in special enamel lined cans.

**LARSEN'S**  
 "Freshlike"  
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**THE LARSEN COMPANY, Green Bay, Wis.**



## THE SOUTH CAROLINA DENTAL ASSOCIATION PROPOSES TO AMEND THE LAW ON ADVERTISING DENTISTS IN THIS STATE IN LINE WITH THIRTY ONE OTHER STATES

*Paragraph 4, Section 18, Present South Carolina Law.*

For advertising in any such manner as to defraud or deceive, or that will tend to defraud and deceive the public, and when proof is submitted to the Board that any dentist has failed to perform any work in any manner and at such price or prices as may have been advertised, or when any dentist shall have failed or declined to perform over, without further remuneration, in any period which may have been specified such work as he may have guaranteed through advertising or in any other manney.

*Substitute Oregon Law as Follows for Paragraph 4, South Carolina Law.*

For unprofessional conduct, or for gross ignorance or inefficiency in his profession. Unprofessional conduct shall mean employing what is known as "cappers" or "steerers" to obtain business; the obtaining of any fee by fraud or misrepresentation; wilfully betraying profes-

sional secrets; employing directly or indirectly any student or any suspended or any unlicensed dentist to perform operations of any kind, or to treat lesions of the human teeth or jaws, or to correct malformations thereof; making use of any advertising statements of a character tending to deceive or mislead the public; advertising professional superiority or the performance of professional services in a superior manner; advertising prices for professional service; advertising by means of a large display; glaring light signs; or containing as a part thereof the representation of a tooth, teeth, bridgework or any part of the human head; employing or making use of advertising solicitors or free publicity agents or advertising any free dental work or free dental examination; or advertising to guarantee any dental service, or to perform any dental operation painlessly.

The South Carolina Dental Association proposes to amend the present law on Advertising Dentists and bring it in line with thirty one other states which have adopted similar laws. The amendment will be very much broadened in line with the Oregon State Law which has been up-held by the Supreme Court of the United States.

## BOOK REVIEWS

**POLIOMYELITIS:**—By John F. Landon, M.D., Attending Physician, Willard Parker Hospital, Special Consultant in Pediatrics, Womens Hospital, New York City, Assistant Attending Pediatrician Roosevelt Hospital; and Lawrence W. Smith, M.D. Pathologist, Willard Parker Hospital, formerly Assoc. Professor of Pathology, Cornell Medical School and Harvard Medical School. Cloth. Price \$3.00. Pp. 275, with 18 illustrations. New York City.

The Macmillan Co. 1934

This is a handbook for physicians and medical students. It is based on a study of the 1931 epidemic in New York City.

During the summer and early fall of 1935 a rather extensive, but mild epidemic of poliomyelitis occurred in North Carolina. It caused a great deal of consternation, indeed almost panic among the people there, and to some extent in adjacent states.

South Carolina escaped but the populace was apprehensive, and anxious for information.

Many physicians who had had no experience with this dreaded malady, had many questions put to them which they could not answer.

While many problems today still remain, yet a vast amount of research has been done, and much has already been learned.

This very practical volume by Landon and Smith gives an excellent first hand account of the epidemiology, the symptomatology and the diagnostics. Of course prophylaxis and treatment are far from settled. This practical work which is free from padding brings our knowledge up to date and should prove very helpful to anyone who wishes to get a concise and accurate outline of poliomyelitis.

The book is well printed on good paper. The illustrations are very helpful in portraying exactly what happens to the patient and his nervous system.

It is in short a book well worth having in ones library and is one that is easily read.

R. M. Pollitzer, M.D., F.A.A.P.  
Greenville, S. C.

# THE JOURNAL

of the

## South Carolina Medical Association

VOLUME XXXII

MARCH, 1936

NUMBER 3

### PURULENT PERICARDITIS

By

L. EMMETT MADDEN, M.D.,  
Columbia, S. C.

This paper is presented to the Association to bring to its attention the fact that pus in the pericardial sac is not uncommon and that careful and frequent examination of the heart in those conditions in which it may occur will lead to a correct diagnosis, the institution of proper treatment, and thus materially reduce the mortality rate. Osler said "No serious disease is so frequently overlooked" and he might have added, overlooked because not thought of and not looked for.

While writers have claimed that purulent pericarditis was known to ancient medical men, the rational diagnosis probably dates to Auenbrugger's discovery of precordial bulging and precordial dullness. This was followed by Lannec's description of pericardial friction rub, although he misinterpreted its meaning. Other refinements in the physical diagnosis have been gradually added. Rotch described dullness to the right of the sternum in the fifth interspace. Bamberger found an area of dullness just below the angle of the left scapula. Sibson emphasized the importance of dullness in the third interspaces.

The history of surgery of the pericardium is interesting, but we will only touch upon it. Romero in 1819 performed the first successful pericardiectomies in cases of pericardial effusion. Hilsmann in 1844 performed the first successful pericardiotomy for purulent pericarditis. To the present less than 200 cases have been

reported that have been treated by pericardiotomy.

The incidence of purulent pericarditis is much greater than the number of cases operated upon indicates. Osler found 29 cases of pericarditis in 184 patients dying of pneumonia. Pryah and Pain found acute pericarditis in 33 of 51 autopsies in acute osteomyelitis. Stone in 300 cases dying of pneumonia at Fort Riley found 24 per cent with acute pericarditis, of which, 15 per cent were purulent. Dunham in 603 cases dying of streptococcus broncho-pneumonia found that 44 per cent had pericarditis. Lynch in autopsies on 106 cases dying of lobar pneumonia at Roper Hospital in Charleston, found 6 cases of purulent pericarditis and 2 cases of fibrino-purulent pericarditis. Musser and Norris in 2128 autopsies on cases dying of pneumonia found an acute pericarditis in 12.6 per cent.

From the above statistics we can arrive at some idea of the probable number of cases of purulent pericarditis occurring in North and South Carolina in the years 1932 and 1933.

In South Carolina in 1932 there were 1,176 deaths and in 1933, 1042 deaths from lobar pneumonia. In North Carolina in 1932 there were 1,280 deaths and in 1933, 1044 from it. If we estimate that at least 5 per cent of the cases dying of lobar pneumonia have a purulent pericarditis, then we had 226 deaths in the Carolinas, in which purulent pericarditis was present. The Duke Foundation, however, reports only 3 pericardiectomies in North and South Carolina during these years.

Pryah and Pain in 196 autopsies performed at the Leed's General Hospital between the years 1921-1931 found acute pericarditis in 214 cases and purulent pericarditis in 91.

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Read before the South Carolina Medical Association, Florence, S. C., April 24, 1936.



TABLE SHOWING PRIMARY SOURCE OF  
INFECTION

Acute intra-thoracic disease including subphrenic abscess.	
Empyema .....	30
Pneumonia .....	8
Gangrenous mediastinitis .....	1
Carcinoma of bronchous .....	2
Bronchiectasis .....	1
Subphrenic abscess .....	3
	45
Acute infective conditions.	
Acute osteomyelitis .....	17
Abscess cellulitis, etc. ....	11
Mastoiditis with later sinus thrombosis ..	2
Peritonitis .....	5
Suppurative arthritis .....	2
Liver abscess .....	1
	40
Cardiac conditions.	
Acute infective endocarditis .....	3
Arteriosclerosis and contracted kidney ....	2
Abscess in heart wall .....	1
	6

ETIOLOGY OF PURULENT PERICARDITIS

	Recovered	Died
Pneumonia .....	18	14
Measles and pneumonia .....	1	0
Tonsillitis and pneumonia .....	1	0
Influenza and pneumonia .....	5	0
Pneumonia and pleurisy .....	2	0
Pneumonia and empyema .....	2	7
Influenza, pneumonia, and empyema .....	0	1
Measles, pneumonia, and empyema .....	1	0
Tonsillitis pneumonia, and empyema .....	0	1
Measles, pneumonia, and pleurisy .....	1	0
Abscess, pneumonia, pleurisy, and empyema ..	0	1
Empyema .....	2	2
Measles and empyema .....	1	0
Influenza and empyema .....	0	1
Tonsillitis and empyema .....	0	1
Nasal sinusitis and empyema .....	0	1
Pleurisy .....	1	2
Abscess, pleurisy, and pyemia .....	1	0
Tonsillitis, pleurisy, and arthritis .....	1	0
Puerperal sepsis and pleurisy .....	1	0
Tonsillitis and pleurisy .....	1	0
Pulmonary gangrene .....	0	1
Typhoid fever and congested lungs .....	0	1
Appendicitis (?) with pneumococcus in pericardial exudate .....	1	0
Whooping cough .....	0	1
Influenza .....	2	3
Osteomyelitis .....	5	8
Osteomyelitis, empyema, pneumonia, and sepsis .....	0	1
Pyemia .....	1	4
Gun shot and stab wounds .....	12	0

Idiopathic .....	2	1
None given .....	4	3
Primary mediastinitis ..	0	1
Oesophageal perforation .....	0	1
Gangrene of feet .....	1	0
Trauma of chest .....	1	0
Rheumatism .....	2	0
Tonsillitis, otitismedia, and arthritis .....	1	0
	71	56
Not stated .....		1
Total .....	128	cases.

Winslow and Shipley "Archives of Surgery" Vol. 15 P. 317, 1929.

The organism found depends upon the primary disease. In lobar pneumonia it will probably be pneumococcus. In osteomyelitis the staphylococcus will be present. In pneumonia complicating influenza, it will be a haemolytic streptococcus. Any pus forming organism may be present.

The route by which these organisms get into the pericardial sac also varies with the primary condition. In pneumonia the infecting organism is probably conveyed by the blood stream. In empyema it is probable that the infection spreads by direct extension. This method of conveyance was proven experimentally by Graham and Bell 1918. In osteomyelitis abscess and cellulitis, the infecting agent is brought through the blood stream and may be due to the rupture of a metastatic abscess of the heart wall.

The pericardial sac is described as being fibrous and unyielding, however, in the presence of effusion it may be gradually distended, so that it may hold several quarts. Winslow and Shipley state that the amount may vary from a few drops to 7,500 c.c. The mechanical embarrassment to the heart depends not so much on the amount of fluid present as upon the rapidity with which it accumulates. A sudden haemorrhage into the sac from a puncture or rupture wound of the heart would cause instant death from cardiac tamponade if the pressure were not relieved immediately by pericardiotomy.

The general symptoms of sepsis are present and also those from mechanical and toxic influence of an accumulation of pus in the pericardial sac. Pain is often absent, but frequently the patient complains of tightness or soreness

under the sternum. Cases have been reported which simulated acute abdominal conditions.

Dyspnea or orthopnea are always present and should suggest a careful examination of the heart. Cyanosis will depend upon the degree of circulatory embarrassment or upon associated conditions in the chest. Distension of the veins of the neck is usually present. The pulse is rapid, of small volume, and often irregular. In large accumulations there may be dysphagia and aphonia. Anxiety and restlessness are usually present.

The diagnosis is confusing due to the difficulty in differentiating between an enlarged or dilated heart and a pericardial effusion. That this difficulty is real is shown by the fact that Truesdale in 153 autopsies found only 17 per cent and that Poynton in 100 cases found only 6 per cent had been correctly diagnosed.

Upon physical examination the patient appears ill, restless, and anxious. He may be elevated on a back rest or lying on his left side. Dyspnea or orthopnea and varying degrees of cyanosis are always present. The veins of the neck appear full. There is frequently some oedema of the dependent parts.

Inspection of the heart may reveal some precordial bulging or swelling. This may be marked in young patients. The apex beat is frequently absent or may be wavy over several interspaces.

Upon palpation a friction rub may be felt and the apex beat may be absent. Oedema of the soft tissues can frequently be made out when no evident swelling or bulging is present. The liver edge is frequently palpable below the costal margin.

Percussion shows an enlarged area of cardiac dullness. This area extends higher than would be expected from a dilated or enlarged heart, there being definite dullness in the third interspace. There is usually dullness to the right of the sternum and there may be an obtuse cardio-hepatic angle dullness. In small effusions the cardio-hepatic angle is likely to be obtuse, however, as the amount of fluid increases the angle becomes acute. There is dullness posteriorly close to the vertebral column and under the angle of the left scapula.

Upon auscultation a friction rub may be heard in all early cases and may be present even

after a considerable accumulation of fluid. The friction rub may be present only with the patient in an upright position leaning forward. The heart sounds are muffled and distant, although occasionally they are very clear due to the anterior position of the heart.

The electro-cardiograph offers no assistance in the diagnosis. X-ray examination of the heart reveals a water-bottle shadow and a loss of the normal cardiac outline. Fluoroscopic examination shows a diminution or absence of cardiac pulsation.

If after a careful consideration of the history, physical findings and x-ray examination there remains doubt as to the diagnosis, paracentesis of the pericardium should be performed. There has been a question as to the advisability of paracentesis in purulent pericarditis, due to the danger of injury to the heart, coronary vessels, or the internal mammary artery. Winslow and Shipley found that 86 cases had paracentesis and in none of them was there injury to any of these structures. Careful paracentesis should be attended with little danger. Paracentesis will clinch the diagnosis and give definite evidence of the type of organism present and thus influence treatment. However, paracentesis should be considered only as a diagnostic procedure and should never be used as a method of treatment.

The mortality rate of purulent pericarditis treated medically is 100 per cent (Rhodes), while treated surgically by open drainage it should not be over 40 per cent. In 152 cases from the literature reported by Truesdale in 1933 the mortality rate was 42 per cent. Surgery should be resorted to as soon as the diagnosis is made. Careful post operative treatment is essential, all supportive measures are indicated. All septic foci should be sought for and drained.

The prognosis in any given case varies with the primary disease, the infecting organism, and the complications present. The cases of direct infection of the sac, as puncture wounds, have the best prognosis and practically all are cured. The second best group of cases is those secondary to pneumonia and due to the pneumococcus. The least favorable are the cases secondary to osteomyelitis or cellulitis in which a staphylococcus is present. However, in all



groups open operation offers the only chance of a cure and no patient should be considered too ill for the procedure. Complications, such as empyema, render the prognosis more serious.

Late post operative results are very good. If the patient survives one would expect him to be crippled by an adhesive pericarditis. The literature on the subject shows this to be unusual. Winslow and Shipley were able to follow the subsequent course in 29 cases reported. The lapse of time from date of operation varied from five months to twenty-nine years. Twenty-five of the twenty-nine cases were well and at work; one had died of an adhesive pericarditis; one was expected to die of this complication; one had died of a brain abscess; and one case had died from cause unknown.

#### CASE REPORTS

These cases have been reported by Dr. George Bunch in a paper read before the Southern Surgical Association in December 1934. Two of these cases are being reported through the courtesy of Dr. Joe Dillard and Dr. C. E. Owens.

Case I: Baby J. H. male—white—19 months—was admitted to the South Carolina Baptist Hospital September 28, 1929, with a history that he was normal at birth, but had not been well since an attack of whooping cough when he was six months old. He had an attack of pneumonia early in September and had been acutely ill since that time. There had been progressive loss of weight accompanied by Dyspnea and weakness.

Examination showed a pale, emaciated child with oedema of face and legs. There were crepitant rales over the left chest with dullness in left axilla. Pericardial dullness was enlarged and no friction rubs were heard. The sounds were clear and distinct. X-ray of chest showed a large shadow in the cardiac area of water-bottle shape. Paracentesis was performed.

October 6th: Surgical drainage of pericardial sac was performed and pneumococci were found in the pus obtained.

October 7th: An encapsulated empyema of the left pleura was drained. Patient did nicely and was discharged October 28, 1929.

Physical examination on March 15, 1934,

revealed a healthy boy whose heart was normal upon physical, x-ray, and electro-cardio-graphic examination.

Case II: Master D.J.S. An eleven year old white boy was admitted to the Baptist Hospital 3-18-31 with an encapsulated empyema at the right base, following influenza and lobar pneumonia. He had a thoracotomy performed and after an uneventful convalescence was allowed to go home. Patient did very well up to April 23rd, when he developed shortness of breath, swelling of legs, and general prostration. Readmitted to the hospital April 24th. Temperature 101, pulse 130, and respiration 22.

The patient was sitting up in bed quite dyspneic. The thoracotomy wound was healing. There was an enormous area of precordial dullness, extending 1 1-2 fingers to the right in the 4th interspace and to the left to the lateral chest wall. On the left no heart impulses could be seen or felt. The liver edge was palpable at the level of the umbilicus and there was marked oedema of both legs.

Laboratory findings: White blood count 26,000, polymorphonuclears 78 per cent, hemoglobin 78 per cent. X-ray examination showed a typical water-bottle shadow in the cardiac area.

On April 25th, 250 c.c of thick white pus was removed by paracentesis with improvement in heart action. Pneumococci were reported in the pus. On April 26th, 175 c.c and on April 27th, 50 c.c. of pus were aspirated. Phlebitis developed in the left leg with swelling and tenderness along the posterior tibial vein.

On April 30th, the patient was referred for operation and under local anesthesia the 6th costal cartilage was resected and the pericardium drained. Although mechanical embarrassment of the heart was relieved the patient died of general sepsis on May 4, 1931. No autopsy was obtained.

Case III: Mr. H.O.S. A 29 year old white man was admitted to the Columbia Hospital December 4, 1931, having been sick since November 11, 1931, with pneumonia. A left non-encapsulated empyema was drained by thoracotomy on the day of admission. Patient did very well for some days, but then became worse and physical examination showed an acutely ill pa-

tient with marked dyspnea. There was a draining thoracotomy wound in the posterior axillary line on the left side. There was a moderate enlargement of the cardiac dullness and a definite friction rub was heard over the base. The x-ray showed a water-bottle shadow in the middle of the thorax. A paracentesis was performed and pus obtained which contained pneumococci. The patient was operated upon December 21, 1931, and from 4 to 6 ounces of purulent fluid escaped.

Following operation the patient improved and his temperature fell to normal on the 4th day and remained normal for several days. Following this period of improvement the patient began to go down hill rapidly and to have recurrence of his septic symptoms. No cause could be found until a x-ray of the chest on January 4th, showed a shadow about the size of a lemon in close proximity to the heart in the region of the left hilum. Pus was obtained by paracentesis in this area, but the patient died several hours later. An autopsy was obtained and the pericardium was empty except for a moderate amount of fibrin. An encapsulated empyema was found in the region of the pulmonary hilum on the left side. The impression at autopsy was that this patient had been cured of his pericarditis, but had died from this, his second empyema.

Case IV: T. R. White boy 12 years of age was admitted to the Baptist Hospital January 12, 1933, after having been sick 4 weeks with a deep abscess of the thigh which was incised. He later developed pneumonia. On admission his temperature was 104, pulse 130, and respiration 30, leucocytes 18,000 with 80 per cent polymorphonuclears, hemoglobin 60 per cent. His urine contained albumin and casts. Physical examination showed an acutely ill, emaciated boy quite dyspneic with moderate amount of cyanosis. Examination of the chest showed numerous rales over the right upper lobe. The cardiac dullness was enlarged to the mid-clavicular line on the left and two finger breadths to the right of the sternum in the fifth interspace. A definite friction rub was heard over the base of the heart. A paracentesis showed pus which upon microscopical and upon cultural examination showed staphylococci.

On January 13th, the day after admission, the 6th costal cartilage was resected and about 6 ounces of purulent effusion containing masses of fibrin was drained from the pericardial cavity. Before incising the pericardium the left pleura was accidentally opened and was closed with catgut. The pericardium was drained with a rubber wick.

He improved after operation, but continued septic. January 18, 1933, a left empyema was drained. Staphylococci were cultured from the empyema pus, from the pericardial pus, and from the blood stream. He was at times, extremely ill and had numerous septic exacerbations with high fever. He remained in the hospital until April 3, 1933—71 days.

March 15, 1934, showed a robust boy, a football player, with a normal heart upon physical, x-ray, and electro-cardiographic examinations.

#### CONCLUSIONS

1. Purulent pericarditis is not a rare condition.
2. Frequent and careful examination of the heart is indicated in pneumonia and all other conditions that it may complicate.
3. The profession is failing to diagnose purulent pericarditis.
4. The treatment is purely surgical.
5. Following recovery most patients have normal hearts.

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#### DISCUSSION

Dr. George H. Bunch, Columbia:

I am very much interested in this subject. I think that the medical profession have been much asleep in these cases over the years and that they really are only beginning to realize the true significance of this condition and the importance of it. We are indebted to Dr. Madden for bringing to our attention today a complication of pneumonia and of other septic condi-



tions that is evidently much more common than any of us heretofore have realized. The number of deaths from pneumonia in North and South Carolina, as obtained from the State Boards of Health, for the years 1932 and 1933, as compared with the very few operations for purulent pericarditis, as given by the Duke Foundation for these states for these years, proves that this condition is much more common than we thought and that these patients die without the complication being suspected or being treated. It behooves internists, pediatricians, general practitioners, and all clinicians, to become pericarditis-minded. The large heart shadow, the large area of precordial dullness, indicate pericarditis with effusion. When they occur, if there is fever, I think paracentesis should be done to learn the nature of the fluid. If there is pus, we have an abscess in the pericardial sac, an abscess that can not drain spontaneously; which if left undrained will cause the death of the patient in one hundred per cent of the cases. Fortunately, however, these abscesses may be drained by a simple surgical procedure, and then the mortality drops to forty per cent. Under local anaesthesia the sixth left costal cartilage can be resected, and then we get direct access to the pericardium. All these cases are desperately ill from the primary condition and this complication, but no case is too sick to be operated on, no case is too sick to be given the chance that surgery has for him. This operation can be done under local anesthetic, without shock and practically without danger.

The diagnosis in these cases must be made by the clinician, by the man who is in daily attendance on the pneumonia patient. When the surgeon sees the case, the diagnosis has already been made. Close cooperation between the clinician, the roentgenologist, and the surgeon is at all times necessary for the best result.

Dr. C. H. Blake, Greenwood:

I have had the privilege of seeing one of these cases that Dr. Madden has reported. It was referred to my associate, Dr. Turner, in Greenwood, and I saw it in consultation with him. The patient was admitted to the hospital on January sixteenth with the history that six weeks previously he had had pneumonia, from which he failed to get well. You can see the definite enlargement of the pericardium here. (Slide.) Dr. Madden has explained these things so definitely that I shall just show you the enlargement of the pericardium. You can see the enormous distension. This boy came in extremely ill, with a definite subnormal temperature at all times. There was definite increase of the heart dullness, with a dullness in the axilla, also due, I presume, to compression of the lung itself. At first we thought we had probably an empyema and did a paracentesis of the pleura and got nothing. Then on the eighteenth we did a paracentesis of the pericardium and withdrew twenty ounces of purulent fluid. This we stained with the

Gram method and proved to be rather rich in a Gram-positive organism, which we took to be the pneumococcus. The patient had relief from his distress after the puncture, but two days after it the distress became so great that we did another paracentesis and withdrew twenty-eight ounces of purulent fluid. The next day he was distended again. In other words, the accumulation of fluid was so rapid that we decided to do a pericardiotomy, which we did and put in a rubber dam. That was left in for two or three days and then taken out. The patient continued to drain and made no progress at all. The blood picture in this case showed a pneumococcal blood-stream infection also. After drainage his temperature would go up to around 100 to 101. He was operated upon on January twenty-first. On February first he developed excruciating pain in the chest, coughing up bloody sputum; I presume he had another pneumonia. On February fourth he died.

I think there is no question that this patient had had a purulent pericarditis for a long time and as complication of his pneumonia. We must look more carefully for this complication.

Dr. Roger G. Doughty, Columbia:

I just want to point out that in the years I have been in Columbia I have seen not a single patient with this condition. It must be much more common than stab wounds of the heart, and I have seen three of those. It must be much more common than other conditions which we see occasionally, and I simply want to take this opportunity to thank Dr. Madden for his presentation of the cases and to point out how rarely other surgeons in our community have seen this condition diagnosed. And until it is diagnosed it can not be handled from a surgical point of view.

Dr. J. A. Dillard, Columbia:

In the paper and in the discussion this morning there seems to be brought out the large number of these cases that are found at autopsy, and how few are found prior to autopsy. When men doing general practice, as I do, pick up a textbook and read of purulent pericarditis, or pericarditis with effusion, we find the textbooks set out the classical symptoms to be pain, increased cardiac dullness, muffled heart sounds, and absence of the apex impulse. Now, Capps, of Chicago, proved by mechanical irritation experiments that the entire inner sac of the pericardium is insensitive except in the left lower aspect, which is due to the phrenic nerve. (In passing, I might say that the surgeon, in placing a rubber dam for drainage, should not place it in the left lower aspect because of the pain which it will cause.) Cardiac dullness also may not exist. If there are adhesions between the anterior chest wall and the pericardium, as the pus forms, the sagittal diameter of the pericardium is increased and the pus gathers in the mediastinal portion of the pericardium which may hold a large amount of pus without increasing the cardiac dullness. As for the absence of the apex impulse and

the muffled heart sounds, they may be there, but they also may not be there. If the adhesions which we just spoke of in the other condition exist, we get very distinct heart sounds and the apex impulse is there and in its normal position. Also, if the patient has been lying in a dorsal position most of the time, and if there is very thick pus, the pus may gravitate to the posterior portion of the sac and force the heart toward the anterior chest wall in which case the heart sounds would not be muffled nor would the apex impulse be absent.

Dr. P. D. Hay, Florence:

I wish to thank Dr. Madden for his very excellent paper on this subject, which has been of some interest to me in recent years, and I should like to report briefly a case of purulent pericarditis which we had a few years ago. This case was of a man fifty-two years of age who had a lobar pneumonia. After a rather delayed resolution, he began running a septic temperature. The chest signs were clearing up pretty well, but there were signs of an enlarged heart. He was referred to me for an x-ray examination of his chest and possibly the heart. In this case, in addition to the water-bottle shape and the enormous dilatation of the heart shadow, he had a motionless heart shadow except at the extreme apex, where he had very tumultuous pulsations of the cardiac outline. There was only one conclusion I could arrive at in a case with this septic temperature, with enlarged heart, and with this localized, tumultuous pulsation; that is, that he had some adhesions which fixed the parietal pericardium to the heart at the apex and which occasioned pulsations at that point and nowhere else; and I made a diagnosis of purulent pericarditis. I think it is a point that should be borne in mind. In this case a paracentesis was done and about 100 c.c. of thick pus was aspirated. Then a pericardiectomy was done, but he was in very poor condition when it was done, and he died. The autopsy showed shaggy pericardial exudate extending for about two inches in diameter at the apex of the heart, and at that point there were adhesions. At all other points there was tremendous dilation of the pericardium.

O. B. Mayer, Columbia:

A very important condition has been clearly brought to our attention. Undoubtedly, cases are being overlooked. Purulent pericarditis should be kept in mind in all infectious cases, especially pneumonia, when the sickness is unduly prolonged. Frequent examination of the chest is necessary to detect early signs; a heart may show no outward evidence today and twenty-four hours later alterations of sounds, size or increased dullness with diminished precordial activity, or a friction, may have occurred, calling to mind the pathology that is taking place.

I have been on the alert to detect this condition, especially since 1931, when I was privileged to be associated with Doctor Bunch in one of the reported

cases, but I have not recognized one since.

The out-come depends on many factors, especially early recognition and proper surgical drainage; obviously, more than this is necessary for recovery. When there is an associated blood stream infection, the prognosis is more uncertain even though there is early recognition and drainage.

It is worthy of comment that Doctor Madden's cases were all males, and three out of four were children. Pediatricians especially should be on the alert.

Dr. J. H. Cannon, Charleston:

I had the pleasure of hearing Dr. Churchill, of the Massachusetts General Hospital, discuss the question of purulent pericarditis from the surgical side, and thought it was interesting. He emphasized this point particularly, that in all septic cases he required his house surgeon to note on the progress sheet daily that he had examined the heart and there was nothing found wrong. That had to go down daily, because he was emphasizing the point that a purulent pericarditis which is not drained early results in almost one hundred per cent mortality, and that it had to be found early for drainage to do any good, and that if you did not find it early there is no use in draining.

## THE ETIOLOGY AND TREATMENT OF PEPTIC ULCER WITH AN ANALYSIS OF SEVENTY FIVE CASES

By

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From an historical standpoint, peptic ulcer is a comparatively new disease. It was first described by Cruveilhier(1) in the early part of the nineteenth century. It is no respecter of persons, developing in the high and the low, the rich and the poor. It may occur in the first few days of life or in the centenarian. In women ulcer incidence is highest in the third decade, while in men it is highest in the fourth and fifth decades. According to Beckman(2), multiple ulcers are thought to occur in from twenty to thirty per cent of cases. Peptic ulcer is said to occur four to eight times more frequently in men than in women, and duodenal ulcer is said to occur four to eight times more frequently than gastric(3). Beckman(2) says that the majority of ulcers occur in the duodenum of the male. Bevan(1) has gone so far as to say that at least ten per cent of the population have peptic ulcer.

Read before the South Carolina Medical Association, Florence, S. C., April 24, 1935.



It is generally conceded that the ulcer is produced by the action of the hydrochloric acid of the gastric juice upon some devitalized area or some point of lowered resistance, but there seems to be considerable disagreement as to what causes this lowered resistance. A number of theories have been advanced with regard to the etiological factor or factors involved in bringing about this lowering in the vitality or resistance of the stomach or duodenal wall, but as yet none of them have been definitely proven to the exclusion of the rest.

It is claimed by many that the chief etiological factor is a general malnutrition, especially the presence of anemia. (2) Proponents of this theory point out that during the World War, when the food blockade was on, there was a great increase in the incidence of peptic ulcer in Germany and Austria. In connection with this theory Smith and McConkey (4) have made some interesting discoveries. They noted that in guinea-pigs peptic ulcer was associated with scorbutic lesions. They have been able to produce peptic ulcers in guinea-pigs by feeding them diets deficient in vitamin C.

Another group claims that the chief etiological factor is trauma or insult to the gastric or duodenal mucosa. The trauma may arise from the habitual use of tobacco or alcohol, from habitually eating very hot or very cold foods, or irritating foods. External trauma may also be a causative factor. Eusterman and Mayo (5) have pointed out that under exceptional circumstances, a blow to the abdominal wall may cause a gastric ulcer.

There are others who claim that peptic ulcer arises from focal infection. Nickel (6), who has experimented with cultures from a number of ulcer patients, thinks that a streptococcus is a causative agent. Macrae has even gone so far as to say that peptic ulcer is always due to infection in some part of the body.

Mental stress and nervous strain have been advanced as an etiological factor. It is generally conceded that the emotional, neurotic, nervous type of person is most likely to develop an ulcer. Adherents of this theory point out that ulcer patients improve much more rapidly when their minds can be relieved of worry and anxiety.

Von Redwitz (2) in 1927 stated: "Though peptic ulcer at times seems to be an entity, it is in many cases only part of what may be called an ulcer sickness or ulcer tendency, in which case its presence is attributable to a constitutional basis, and recurrence is likely to take place in spite of either medical or surgical treatment."

To sum up, it is not at all improbable that all of the above factors may enter into the etiology of peptic ulcer; and that, while in some cases it may be due directly to focal infection, or to trauma, or to nervous strain, or to a systemic condition, in most cases it is due to a combination of these etiological factors. Finally most writers will agree that the real cause of peptic ulcer is still unknown.

#### TREATMENT

The object of the treatment of peptic ulcer is to remove the underlying cause and to bring about a repair of the damage produced by the ulcer. Since the etiology is still uncertain, efforts to remove the cause must be empirical. All foci of infection should be cared for. Mental and nervous strain should be alleviated as much as possible, and efforts should be made to keep the patient in a healthy state of mind. Physical rest of the ulcer-bearing area is also important.

It is evident that ulcers in different individuals respond differently to treatment. It is probable that many ulcers occur, give few or no symptoms, and heal with little or no treatment. This is evidenced by the finding of ulcers on routine X-ray examination and the presence of ulcers and healed ulcers on post mortem examinations. Again there are ulcers in which treatment is followed by complete and permanent healing. Yet again there are some which persist or recur in spite of all treatment, whether medical or surgical.

In order to treat an ulcer with success; skill, close observation and patience are required. The treatment may be divided into medical and surgical. It is the opinion of most of the prominent surgeons that, in early ulcers, and those cases without severe hemorrhage, and in the absence of perforation and pyloric obstructions, medical treatment should first be tried and surgery resorted to only when it is evident that results cannot be secured by medical means.

There are many methods of classical therapy which, from lack of time, will only be briefly mentioned. The Sippy treatment is probably the best known and most widely used. In Lenhartz's treatment emphasis is given to the addition of eggs to the milk diet. The outstanding feature of the Leube treatment is the continuous application of hot poultices to the epigastrium; while in the Smithies treatment no food is given by mouth from four to seven days, but rectal feedings are instituted.

Recently Winkelstein(7) has advocated a method of therapy in which he uses a continuous alkalinized milk drip into the stomach. This consists of allowing a solution of milk containing five gms. of bicarbonate of soda to the quart to drip continuously into the stomach at the rate of thirty drops a minute. The object is to furnish a constant neutralization of free hydrochloric acid throughout the twenty-four hours of the day. He has reported satisfactory results in forty-two patients.

Rivers and Vanzant(8) believe that mucin is of value in the treatment of some cases of benign ulcer. It may have some protective action for the gastric mucosa. It makes an ideal antacid through its high combining power for free acid and its failure to disturb the acid-base balance of the body. It does not markedly excite gastric secretion. The usual daily dose is from eighty to one hundred gms., fifteen gm. doses being given at such intervals as are found necessary.

In all of the above methods of treatment it is necessary for the patient to stop his work and spend several weeks in bed, either at home or in a hospital. And since the vast majority of ulcers occur in adult males, who are frequently the bread winners of their families, there is considerable economic loss attached to this method of treatment.

In view of these considerations several forms of ambulant frequent feeding treatments have been introduced, which are practicable for both the average physician and the average patient. The object of these treatments is to keep the patient at work while he is taking the treatment. Alvarez(2) has instituted one form of ambulatory treatment. His treatment is based on the hypothesis that if a patient is to con-

tinue to work he must have three good meals a day. He gives his patients a "smooth diet" list from which to choose their meals, and he does not prohibit meat or meat broths. He points out, however, that the important point in the treatment is the taking of food between meals.

Another type of ambulatory treatment, and one which I have used with success recently in three cases, is described by Sturtevant(9). I quote from his article. "We found that there were certain things we could not do in an ambulatory treatment which were done in some of the best known and most popular treatments. We found that we could not give a preliminary fast of one to five days. We could not apply heat or cold to the abdomen. We could not apply the principle of rest in healing so far as to keep the patient in bed. It is important to a fair percent of ulcer patients to permit them to work. If we take our working patients from their work, a great load is thrown on our social service, for the patients' families must live." He insists, however, that the patient must absolutely stop smoking. The feedings must be taken regularly at exactly the scheduled time, and that a feeding must never be omitted. The patient cannot remain in bed, but he is expected to be in bed at least ten hours out of the twenty-four. During the first week the patient is given alternate feedings of half a pint of milk and of half a pint of milk with a fourth of a pint of cream. These feedings are given alternately every two hours from eight A.M. to ten P.M. Two quarts of milk and a pint of cream are given during the twenty-four hours. This gives the patient two thousand calories per day. A small amount of alkaline powder is given with each feeding. The pain is usually relieved within twenty-four hours. By the end of the first week the patient is hungry, has lost one to four pounds in weight, but feels much better. At the beginning of the second week cooked cereal or milk toast is added to the diet three times a day. The diet is further increased in the third week, and by the fourth week the patient is on a soft diet three times a day with milk feedings in the mid-morning, mid-afternoon, and at 10 P.M. He is kept on this diet for at least six months. At the end of this time



he is given a fairly full diet and advised to remain on it for the remainder of three years. Sturtevant says that he gets just as good results with this treatment as with the old bed treatment and claims that he is getting over eighty per cent cures among those who follow directions.

Recently peptic ulcer has been treated by the intravenous injection of foreign protein, lipo proteins, and a combination of lipo proteins with emetine. It has been shown experimentally that these substances decrease gastric and intestinal motility, as manifested by a decrease in gastric peristalsis and an arrest of pylorospasm. It has furthermore been shown that the injection of foreign proteins produces a hyperemia of the gastric mucosa thereby tending to promote healing. Pitkin(10), an enthusiast of this method, describes the technique and dosage in the June, 1931, edition of the American Journal of Surgery.

The principles of the medical treatment of peptic ulcer may be summarized as follows: Physical and mental rest are necessary. The ulcer must be protected from irritation by a suitable diet. The diet must vary to meet the needs of the individual patient. Hyperacidity must be controlled by alkalis. Success depends upon the proper selection of cases suitable for medical treatment and upon the cooperation of the patient. Finally, in those cases which do not respond to medical treatment, or in which the ulcer recurs in spite of adequate medical treatment, or in which complications develop, surgery should be resorted to.

#### AN ANALYSIS OF SEVENTY FIVE CASES OF PEPTIC ULCER

On looking through the charts of Roper Hospital, in Charleston, S. C., I have found that there have been 75 cases of peptic ulcer in the hospital during the past six years. These cases were attended by the several physicians and surgeons who happened to be on service at the time these cases were in the hospital. The following is an analysis of these cases.

There were 44 white cases and 31 colored. There were 64 males, of whom there were 39 white and 25 colored, and 11 females, of whom

there were 5 white and 6 colored. The males outnumbered the females by nearly 6 to 1.

The ages varied from 18 years to 79 years. The average age was 40 1-2 years.

The location of the ulcers was as follows: Stomach 21 and duodenum 42, or exactly twice as many. The remaining 12 were diagnosed simply as peptic ulcer, no X-ray being taken to determine the exact location.

*Symptoms*:—The duration of symptoms before admission to the hospital varied from 1 day, in three cases of perforating ulcer, to 14 years. There were 4 cases which gave a history of symptoms extending over a period of more than 10 years. The average duration of symptoms was 20 months. In 71 cases the chief symptom was pain, while in two cases it was hemorrhage. The remaining 2 cases presented no definite ulcer symptoms, the patients being admitted for pulmonary tuberculosis and the ulcer being found on autopsy. Most of the cases gave a history of digestive disturbances, although in several, pain was the only symptom. Hematemesis occurred in 25 cases, or exactly one-third of the total number.

In the gastric analyses the following results were found. The total acidity varied from 90' to 9'. The average was 45.4'. The free hydrochloric acid varied from 74' to 0. The average was 33.5'.

*Treatment*:—13 cases were treated surgically, the remaining 62 receiving medical treatment. Of those receiving surgical treatment, 9 were admitted with a diagnosis of perforating ulcer and underwent operation immediately. Those treated medically were placed on a Sippy, or modified Sippy diet.

The number of hospital days varied from 1 day, in 3 cases, to 89 days in 1 case. The average number of hospital days was 24.

*Results*:—Of the 75 cases, 54 were listed, on discharge, as improved, 4 as recovered, and 6 as unimproved. There were 11 deaths in this group. However, only 5 of these deaths were due directly to the ulcer, 4 of the 5 being due to rupture before admission to the hospital. Therefore the mortality, due directly to the ulcer, was only 6.7 per cent.

To summarize briefly; of the 75 cases, the white patients were in the majority. The males

outnumbered the females by nearly 6 to 1. The average age was 40 1-2 years. The duodenal ulcers outnumbered the gastric ulcers 2 to 1. The average duration of symptoms was 20 months. The chief symptom was pain. Hemorrhage occurred in one-third of the cases. Most of the cases were treated medically. Most of the patients left the hospital improved. There were only 5 deaths due directly to the ulcer.

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#### DISCUSSION

Dr. A. E. Baker, Charleston:

I never fail to learn from a paper like the one that Dr. Speissegger has just presented—a paper that is based upon personal knowledge and a study of the statistics. I want to thank Dr. Speissegger personally for his presentation.

Physicians and surgeons, at least of this country, may be classified into four groups according to their belief as to the etiology of peptic ulcer. We have a group that believes it is due to a derangement of the nervous system, causing a spasmodic condition of the muscles of the stomach and duodenum. Those spasms can be seen when the abdomen is open; I have seen them quite often. Such spasms are supposed to be followed by erosion of the mucosa by the peptone enzyme, causing the ulcer. Then there is a group believing it to be caused by an anemia of the mucosa. Dr. Speissegger has described an anemic spot in the mucosa. This is followed by a thrombosis, causing a breaking down of the mucosa. Then a third group believe in hyperacidity. They believe an ulcer is entirely due to hyperacidity. The pyloric glands are the least resistant of any glands in the stomach and can not withstand the increased acid. Then there is a fourth group, who feel that peptic ulcer always follows duodenitis or gastritis.

As far as treatment of peptic ulcer is concerned, I do not think any of us would want our abdomens opened, as much as some of us like to open abdomens. If it was our own, we would want it treated medically first. I believe these cases should be treated medically, except those that have severe hemorrhages, that have to be treated by surgery, or those cases who have frequent hemorrhages, or cases where there is mechanical obstruction, or a case that has been treated medically and fails to respond. But in the beginning I feel these cases should be treated by a non-surgical procedure.

Dr. W. R. Dancy, Savannah, Ga.:

I want to say that it is a special delight to hear someone get up and read a paper on gastric ulcer who does not want to carve a map of the world on the abdomen.

It has been my pleasure to visit some of the gentlemen mentioned in this essay. I visited Dr. Smithies. He stated definitely what his plan of treating ulcer was. He uses the ambulant method, and Dr. Alvarez has followed him. Dr. Alvarez was in Savannah a few years ago, and he stated that the relief of neurotic symptoms is a great aid in the treatment of ulcer. I visited Dr. Sippy in Chicago. He had hundreds of cases there that he said were ulcer cases. He was giving them all forms of milk; some of it was peptonized; some of it was buttermilk—all forms of milk. I asked him what he did with the cases that just can not take milk. "Why," he said, "Doctor, I give them milk."

Dr. Sippy would pump out the stomach once a day, to see if the stomach contained any acid. He gave considerable alkali several times a day, with the idea of keeping the stomach acid neutralized. This procedure seems inconsistent. Here is the thought that we must keep in mind. The thing that digests the meal is pepsin. The thing that produces pepsin is the action of hydrochloric acid on pepsinogen. If you



kill all the hydrochloric acid, you are not going to have gastric digestion.

I keep acute ulcer cases on milk, in one form or another, for at least three weeks. You can give other things that patients will get well on, but the idea is to do the best you can for your patient, and I believe milk is the best thing. The patient must take from three and a half to four quarts of milk a day to keep up his body weight. I do not put the mild cases to bed; the severe cases must go to bed.

Surgery should not be resorted to except for perforation, recurrent hemorrhages, or old chronic ulcers that do not respond to medical treatment.

I should like to impress this point. The ulcer cases which develop into cancer are gastric ulcers and not duodenal ulcers. The statement is made that from two and one-half to four per cent develop into cancer.

In the first weeks or months we all do the best we know how, and the ulcer heals. It is not much trouble to get an acute ulcer to heal, but the difficulty is in keeping it healed. You are going to keep that ulcer healed by removing the cause of the ulcer, remembering that there is practically always a hypersecretion of digestive secretions from the stomach in an ulcer case. It develops the habit of always secreting too much hydrochloric acid, which is an irritant to the ulcer crater. You must get in the habit of keeping your patient on a bland diet and treating him for a long time. Men like Smithies and Sippy keep them under treatment and observation for two years. They must be kept on a bland diet; otherwise the ulcer habit will return.

## TUBERCULOSIS OF THE MAMMARY GLAND WITH CASE REPORT

By

H. Y. HARPER, M.D.,  
Anderson, S. C.

Sir Astley Cooper first called attention to tuberculosis of the breast in 1829 referring to it as "scrofulous swelling of the breast." Lancereaux in 1860 was first to make examination for histological structure of the part. DuBarr in 1881 described the microscopic pathology. In 1914 Deaver reviewed the literature on the subject and reported 74 cases which occurred between the years 1904 and 1914.

The incidence of mammary tuberculosis is variable according to various authorities. Durante and McCarty of the Mayo Clinic reported in 1916 the incidence of 0.51 per cent. Cheever in 1921 reported four cases of mammary tuberculosis in a total of 228 cases at the Peter Bent Brigham Hospital since 1913, an incidence of 1.7 per cent. In Deaver's Clinic,

tuberculosis made up 1 per cent of all breast cases or 2.5 per cent of all benign breast lesions. Bloodgood reported 6 per cent of all benign breast lesions in his service as tuberculosis. Mallory reported an incidence of 0.6 per cent of mammary tuberculosis out of 2,297 cases, examined at autopsy.

The mode of infection of the mammary gland with tubercle bacilli has been discussed at length. Many authorities believe that the process originates in the breast in the majority of cases. Dickinson states that in about 67 per cent of reported cases there is no evidence of tuberculosis elsewhere in the body. He also states that not more than 5 per cent of the cases of tuberculosis of the breast are secondary to tuberculosis of the axillary or cervical lymph nodes. The possible methods of infection are; first, by hematogenous infection from a distant tuberculous process; second, by lymphatic metastasis and third, by contiguity; fourth, infection through the skin or mammary ducts. In reviewing the literature, it seems likely that more than 5 per cent of the cases result from tuberculous lymph glands in the adjacent regions.

Morgen states that the most plausible mode of infection is by way of the lymphatics through a retro-grade process, the original site being either in the glands of the neck or glandular tissue about the hilus of the lung. The infection from primary focus in the thorax through Grosman's path and Rodman's lymph node is mentioned as a favorable route of infection. Numerous cases of primary tuberculosis of the breast have been reported. Trauma is mentioned as an indirect factor favoring tuberculous infection of the breast in that the vitality of the tissue is impaired. Cahill reports a case of mammary tuberculosis in a young girl thirteen years old with a history of injury to the breast five months previously. Bovine tubercle bacillus is thought by some authorities, notably Barker, to be the causative agent in primary mammary tuberculosis.

There are several types of mammary tuberculosis. First;—acute miliary tuberculous mastitis; second, nodular (discreet, disseminating or confluent) tuberculous mastitis; third, sclerosing tuberculous mastitis; fourth, tuberculous

mastitis obliterans; fifth, various atypical forms.

Acute miliary mastitis occurs in conjunction with generalized miliary tuberculosis and has no special surgical significance. The great majority of cases of tuberculous mastitis are the discreet nodular variety. The bacilli lodge in the mammary stroma rather than ductile or peri-ductile tissue and excite a localized tubercle formation. Daughter tubercles form at the periphery of the original focus and in time, usually a matter of several months but sometimes longer, a palpable mass is formed. This varies in size but rarely exceeds that of a hen's egg. The process may progress from the discreet nodular type to the nodular disseminating or the nodular confluent type or to sinus formation. Also it may become encapsulated and lie quiescent for varying periods of time. One does not see in the breast the abundant reticulo-endothelial reaction so characteristic of disease in other organs. There is usually an extensive round-cell infiltration throughout the breast tissue in the region of the lesion and giant cells may be seen. In this type of tuberculous mastitis, the breast is enlarged. The growth is usually slow and does not cause any pain unless necrosis has occurred and the entire breast is broken down. When seen early, the gland is movable, the skin over it possesses a calf-skin like appearance and later redness and inflammation appear. The nipple may be retracted early or late. The glands in the axilla are enlarged early in about 50 per cent of the cases. The axillary glands become involved in the later stages in about 70 or 80 per cent of the cases. In the later stages there are abscess cavities deeply situated in the glands and numerous tubercles. Sinus tracts connect the abscess cavities to the periphery of the gland. In the disseminating type, sinus tracts are numerous throughout the gland.

The sclerosing type of tuberculous mastitis is a very slow progressive lesion and most frequently seen in elderly people. The breast is usually not enlarged and often there is a retraction of the nipple due to a large amount of fibrous tissue formed. Sinus formation is rare in this type. Microscopically, there is usually seen a diffuse lymphocytic, cellular infiltration accompanied by epithelioid and giant cells in-

terspersed with varying amounts of fibrous tissue but very little caseation.

In the tuberculous mastitis obliterans, lesions seem chiefly to surround the milk ducts, destroying the epithelial linings and finally obliterating them. The retained material in the obliterated ducts may excite the formation of foreign-body giant cells. The nipple is sometimes ulcerated away and these cases seem illustrative of a primary ductile infection.

Tuberculosis of the breast is sometimes associated with other diseases of the breast. Cases are reported co-existing with carcinoma and adenoma, fibroma and with pyogenic infections of the breast.

Symptomatology:—In the large majority of cases, the presenting symptom is painless nodule in the breast. Various writers have mentioned the upper outer quadrant of the breast as the site of predilection and the right breast as being most frequently involved. Pain is present in the minority of the cases and in a series of cases presented by Lee and Floyd, 6 per cent of the patients had pain as an initial symptom. Discharge from the nipple or hardening of the breast and sinus formation are other symptoms. In the late stages, a low grade temperature is present, malaise and loss of weight. The physical findings are variable, depending on the stage of the disease. The tumor may be not unlike a malignant growth, being fixed to the surrounding tissue. It is not encapsulated. The overlying skin may or may not have a pigskin appearance. Retraction of the nipple and redness and edema of the overlying skin are often present. Sinus formation may be present. If an unruptured abscess is present, fluctuation may be elicited without the usual signs of abscess; that is, chills and high temperature. The duration of the symptoms is variable from a few months to several years. One case is reported in which a lump was present in the breast eighteen years before a physician was consulted. The involvement is nearly always unilateral. The age incidence is between twenty and fifty years of age. The oldest case on record is a female seventy-three years of age, youngest a male infant six months of age. Differential diagnosis includes actinomycosis, gum-



ma, adenoma, fibro-adenoma, carcinoma, chronic suppurative mastitis, and sarcoma.

Actinomycosis can be differentiated by demonstration of the Ray fungus.

Gummas are ruled out by Wassermann reaction.

Fibro-adenoma are usually well encapsulated.

Sarcomas grow more rapidly and are much more rare than tuberculous mastitis. The demonstration of tubercle bacilli in scrapings from the sinus tract or a biopsy are the only conclusive methods of differentiating tuberculous mastitis from chronic suppurative mastitis, carcinoma and sarcoma.

*Case Report:* Mrs. J. S., age 29. C. C.: Pain in the right breast. P. I.: Onset of symptoms are dated to eighteen months previous to admission when the patient had a similar complaint. Was operated upon by another physician for abscessed breast. The wound apparently healed and since then at intervals of several weeks she has had a flare-up of her old trouble with spontaneous rupture and drainage of purulent material. During the past six months she has had a sinus just to the right of the nipple which has drained sero-purulent material continuously. She has an infant eight weeks of age. The baby has never nursed this breast. The baby's birth weight was six pounds and at seven weeks it weighs less than six pounds. Tuberculosis has never been demonstrated in the baby. Her health has always been good previous to the onset of the present illness. Has had the usual diseases of childhood, no severe illnesses. Review of systems negative. No respiratory symptoms have been noted. Menstruation always regular. Has not menstruated since the birth of her baby.

*Examination:* Temperature 97.3, pulse 88, respiration 20. Blood pressure 116/80. Patient is a well developed and fairly well nourished adult white female of 29 years. She does not appear acutely ill. Skin and mucous membranes are pale, giving the impression of an anemia. Head; eyes, ears, nose and throat negative. Neck; no glandular adenopathy, thyroid negative. The lymph glands in the right axilla are moderately enlarged and slightly tender. Breasts; both breasts are abnormally large. Left breast is pendulous and shows

venous engorgement. Marked increase in areola tissue. Right breast is discolored throughout and is tender, particularly in the right upper quadrant. There are two discharging sinuses near the nipple. Lungs are negative. Heart sounds of good quality, no enlargement, no murmurs. Radial arteries smooth and soft. Abdomen; the recti muscles are separated two finger breadths. Uterus is not palpable by external examination. No tenderness, no masses, no rigidity. Pelvic examination; the perineum is somewhat relaxed. Cervix is larger than normal, unilaterally lacerated. Uterus slightly larger than normal, freely movable. Adnexal region negative. Extremities and nervous system negative.

*Laboratory:* Red blood cells 3,750,000. Hemoglobin 80 per cent. White blood count 8,200, 74 neutrophils and 26 lymphocytes. Wassermann negative. Urine negative.

*Diagnosis:* Chronic suppurative mastitis.

*Operative Record:* Simple Mastectomy was done under ether anesthesia. Wound was closed with drainage, tissue drain being brought out through a stab wound in the axilla.

*Pathological Report:* Gross examination,—the excised breast ulcerated, cut surface about this area showed punctate caseating abscesses. Lactation present. Microscopic examination,—very dense round cell infiltration about ulcerated region. Tubercle formation with giant cells and lymphoid infiltration. *Diagnosis:* Chronic Tubercular Mastitis.

The wound healed by primary intention, tissue drains being removed after forty-eight hours. There was slight drainage from the stab wound. Patient had one degree of temperature on the first post-operative day. Aside from this, post-operative course was afebrile, uneventful. She was discharged on the fifth day. Dressed at home on the eighth and twelfth post-operative days. When last seen three weeks after operation, wound was healed. Patient's general condition was good.

*Conclusion:* From the brief summary of literature on tuberculous mastitis that is presented,—tuberculous mastitis is probably more common than is ordinarily supposed. It may simulate closely chronic suppurative mastitis, actinomycosis, adenoma, gumma, adeno-carci-

noma or scirrhus carcinoma, fibro-adenoma or sarcoma of the breast. In the majority of the cases, abscess with sinus formation with regional lymph gland involvement is the end result. The treatment is total excision of the breast. The regional lymph glands should be removed if they are extensively involved. Some authorities favor x-ray treatment as a post-operative measure. Tuberculous mastitis may occur concurrently with neoplasm of the breast or chronic cystic mastitis. The total number of cases on record are about 515. All of these except twenty have been females. Tuberculous mastitis is essentially a disease of active reproductive period, age incidence being twenty to fifty. A case is presented.

#### CONTENTS

Cahill, J. A., Jr.—Tuberculosis of the mammary gland; occurrence—case report. *Sur., & Obst.*, 1925, Feb., 227-29.

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#### MINUTES OF THE REGULAR MEETING OF THE MEDICAL SOCIETY OF SOUTH CAROLINA, HELD TUESDAY EVENING, FEBRUARY 11th, 1936, AT 8:30 O'CLOCK, AT ROPER HOSPITAL

The meeting was called to order by the President, Dr. W. Atmar Smith.

The Minutes of the previous meeting were read and confirmed.

Dr. Robert Wilson, Jr. made a brief report on the progress of the Credit Bureau and asked that members send in their lists for compilation.

Dr. W. C. O'Driscoll, the Librarian, reported on the work on the Society's Library, and stated that the repairing and cataloguing of the books was nearly complete. The Secretary added that the workers were now engaged in copying the old minutes of the Society. The President requested that a list of all books transferred to the Medical Society Library be included in the Minutes.

A letter from Mr. J. P. Kranz, Secretary of the Southern Tuberculosis Conference, was read acknowledging the invitation from this Society for the meeting of the Conference in Charleston next fall.

A letter from Mrs. Albert Simons, represent-

ing a group of Charleston women, was read. This letter pointed out that there is now no Statute forbidding birth-control activities, and requested that the Society endorse the establishment of a birth control clinic in Charleston. It was pointed out that such activities were endorsed by the House of Delegates of the American Medical Association.

Upon motion of Dr. W. H. Prioleau, this matter was referred to the Committee on Birth Control Clinics.

A letter from Mr. Homer N. Calver, concerning the tax on coconut oil, was received as information.

#### *Scientific Program*

Dr. W. H. Prioleau then made a talk, illustrated by slides, on "The Injection Treatment of Hemorrhoids." This was discussed by Drs. D. L. Maguire and A. M. Buist; the discussion was closed by Dr. Prioleau.

Dr. A. E. Baker read a paper on "Leucorrhea, its Pathology and Treatment," illustrated with lantern slides. This was discussed by Drs. Taft and Buist.

The meeting then adjourned.

Respectfully submitted,

J. I. Waring, M. D.,

Secretary.



# THE JOURNAL

OF THE

## South Carolina Medical Association

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## MARCH, 1936

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### THE DEATH OF DR. J. A. MOOD

In the passing of Dr. Mood the State Medical Association loses an Honorary Fellow of high distinction and of pioneer fame. Dr. Mood was one of the first surgeons in the South Atlantic States courageous enough to open a private hospital. He made a notable success of this venture, and for many years this hospital

was an inspiring medical center in Sumter County and surrounding counties. Dr. Mood lived to a ripe age and saw the marvelous unfolding of modern medicine and was able to extend its benefits to a large clientele. Dr. Mood meant far more to his community and his state than one sometimes conceives as the limited sphere of the daily rounds of the practitioner of medicine and surgery, great as that may be. He had a significant career as a promoter of the best educational facilities possible for the young people of Sumter County. He was a militant leader in this regard and served on the school board of his native city throughout the greater part of his active life. He had an enviable interest along many other lines and was an all around citizen of the highest type. He had that modesty which always becomes true worth and is more often an evidence of it. He maintained a keen interest in organized medicine. He was a friend to the young physician and had a storehouse of knowledge vouchsafed to few in the medical profession.

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### THE PROVISIONAL PROGRAM IN THIS ISSUE

The scientific committee, of which Dr. George R. Wilkinson, of Greenville, is the Chairman, presents in this issue the provisional program for the meeting of the State Medical Association, April 21, 22, 23. Everything is now about complete for the largest meeting of the State Medical Association in recent years. There need be no fear of ample hotel accommodations for any number of physicians and their wives who may wish to attend the Greenville meeting. The Poinsett Hotel will be headquarters and the place for all the meetings, but the Ottaray and the Imperial Hotels have been approved by the Committee as being hostelrys with every comfort and at reasonable rates. We have never known a meeting of the Association in Greenville to fail as a spectacular success. The profession there is in the forefront in their attainments and eminence. Many of the medical men there are known throughout the United States. The hospitals in Greenville rank with the best in the country. The hospitality of the city is known far and wide. It would be impossible to enumerate here the many advantages

the city of Greenville offers the State Medical Association as a meeting place.

There are a number of special features this year, the most notable being the big dinner for the entire Association. It has been many years since such an elaborate affair of this kind has been attempted by the Association. Every doctor should try to bring his wife to the Convention this year. The facilities for entertaining the ladies are unlimited. The Woman's Auxiliary to the Greenville County Medical Society is a very active organization, and they are in position to provide an extraordinary program for the Woman's Auxiliary to the State Association.

Our guests are known far and wide for their contributions to medicine and surgery. Dr. Crile is an international figure in surgery. This is not his first visit to our Association, but in the intervening years his fame has extended around the world. Dr. Porter, who will deliver the address in medicine, is a teacher of outstanding accomplishments. He represents one of the far famed schools of the South, the Medical College of Virginia at Richmond. This school has grown by leaps and bounds in recent years and is representative of one of the great medical centers of the country.

The President of the State Medical Association, Dr. R. C. Bruce, lives in Greenville. He has served on the various committees in their preparation for our coming. It is not often that the coincidence happens that the Association meets in the home city of the President. A record breaking registration is hoped for in honor of our President.

#### PROVISIONAL PROGRAM OF EIGHTY-EIGHTH ANNUAL SESSION, SOUTH CAROLINA MEDICAL ASSOCIATION

April 21, 22 and 23, 1936—Greenville, S. C.

Headquarters:

POINSETT HOTEL

The House of Delegates will meet Tuesday, April 21, at 8 P. M.

#### *Papers to be Read Wednesday and Thursday*

The Treatment of Intestinal Obstruction by the Use of the Duodenal Tube and Suction. Dr. C. R. F. Baker, Sumter, S. C. Discussion: Dr. C. J. Lemon, Sumter, S. C.

Bedside Observations on the Dying. Dr. Roy P. Finney, Spartanburg, S. C.

Blood Transfusion. Dr. David F. Adcock, Columbia, S. C.

Thyroid Disease. Dr. Roger G. Doughty, Columbia, S. C.

Cardiac Pain and Its Management. Dr. A. Izard Josey, Columbia, S. C. Discussion: Dr. George R. Wilkinson, Greenville, S. C.

A Clinical Study of Twenty-five Hundred Cases of Appendicitis at the Anderson County Hospital Over a Thirteen Year Period. Dr. J. R. Young, Anderson, S. C.

The Question of Drainage in Abdominal Surgery. Dr. Carl B. Epps, Sumter, S. C.

Facts of General Interest About X-rays and Radium. Dr. Hillyer Rudisill, Jr., Charleston, S. C.

Vesicular Eruptions of the Hands. Dr. John M. van de Erve, Charleston, S. C. Discussion: Dr. J. H. Crooks, Greenville, S. C.

The Simplified Ketogenic Diet in the Treatment of Bacilli Infection of the Urinary Tract in General Practice. Dr. J. H. Cutchin, Easley, S. C. Discussion: Dr. J. D. Guess, Greenville, S. C.

The Prevention of Loss of Weight in the New-born. Dr. J. I. Waring, Charleston, S. C. Discussion: Dr. Julian Price, Florence, S. C.

Psychology of Sub-normal Individuals. Dr. B. O. Whitten, Clinton, S. C.

A Method for Reconstruction of the Common Duct. Dr. LeGrand Guerry, Columbia, S. C. Discussion: Dr. Robert Cathcart, Charleston, S. C.

Screw Worm Infestation. Dr. W. R. Wallace, Chester, S. C. Discussion: Dr. J. A. Hayne, Columbia, S. C.

The Treatment of Congenital Syphilis. Dr. D. Lesesne Smith, Jr., Spartanburg, S. C.

#### SPECIAL ORDER

Wednesday afternoon, April 22, 1936

4:00 P.M.

*Address*

Dr. George W. Crile, Cleveland, Ohio

5:00 P. M.

CLINIC

*Hyperinsulinism*

Dr. George R. Wilkinson, Greenville, S. C.

#### SPECIAL ORDER

Thursday, April 23, 1936, Noon

*Address*

The Relation of Nutritional Deficiencies to Heart Failure—Dr. William B. Porter, Richmond, Va.

#### AFTERNOON

Ward Rounds and Demonstration of Orthopedic Cases, Shriner's Hospital for Crippled Children: Dr. J. Warren White and Dr. L. H. Coleman, Greenville, S. C.

#### SCIENTIFIC EXHIBITS

Drs. E. W. and McNeill Carpenter, Greenville, S. C.



## PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 304 (29277). Dec. 13, 1935

### *Case of Dr. Rhame*

Student Wallace (reading):

A white female, housewife, age 39 years, admitted 9-19-35, died 10-5-35.

History: 5 weeks before admission, patient noted general malaise and constipation. A fever developed and had persisted to admission. Soon thereafter a sudden pain developed in the right upper abdominal quadrant, constant, with no radiation. "No history of typhoid fever or typhoid vaccine previously." Only recorded previous illnesses were tonsillitis and influenza. Review of systems all noted as "neg." except "sore throat," "toothache," and "slight hemorrhoids." Family history irrelevant. Married twice; 1 pregnancy by first husband, with miscarriage at 6 1-2 months. No other pregnancies.

Exam: A white female, of normal stature; weight 140 lbs. (usual weight 150 lbs.), temp. 100.4, pulse 120, resp. 20, B. P. 130-88. Skin and mucous membranes yellowish, sclerae yellow. Tongue coated. Unable to examine mouth and throat due to nausea. Lymph glands "neg." Chest "well developed, clear." Cardiovascular: "pulse full, no pathology detected." Abdomen: "tenderness and rigidity over RUQ." Remainder of exam. neg.

Laboratory: Urine (9-19; 9-23; 9-28) cloudy, yellow, acid; S.G. 1.014-1.028; alb. 0, 0, 3 plus; sugar, acetone, bile neg.; casts 0, 0, 1 plus; leukocytes 1 plus (voided specimens). Blood (eight counts, 9-19 to 10-3): Hb. 72 per cent-67 per cent(D); RBC 4,189,000; WBC 15,700 on 9-19, with gradual and progressive increase in each successive count to 43,800 on 10-3; polys 78 per cent on admission, gradually rising to 91 per cent on 10-3; lymphs and monos progressively decreasing. (9-27) Bleeding time 2 min., coag. time 4 1-2 min. Blood Kolmer and Kline neg. Van den Bergh (9-30) direct 3 plus, delayed direct 4 plus; quantitative bilirubin 4.1; icterus index 57. Blood culture (9-23) neg. Stool culture (9-25)

for bacillus typhosus neg. Widal (9-19) 2 plus, (9-21) 3 plus, (9-23) 3 plus, (9-25) 4 plus, (10-2) 4 plus. Agglutination tests for paratyphoid A and B continuously neg.

Course: Temp. of continuous type, between 99 and 101.2 until 9-25, then of intermittent type for 3 days, rising in P.M. to 100.6, falling in A.M. to 98. From 9-29 until death, temp. not over 99.8, gradually falling below normal. Pulse continuously above temp. curve on chart, usually varying between 110 and 130. Resp. 20-32, not particularly rapid towards end. Clinically no new symptoms appeared. The jaundice persisted, possibly became deeper. The pain in the RUQ was apparently constant. Became progressively weaker, died at 4:30 A.M. on 10-5-35.

Dr. Robert Wilson, Sr. (conducting): Mr. Pope?

Student Pope: There are pain in the abdomen, continuous fever, and a positive Widal to suggest typhoid fever. On the other hand, the spleen is apparently not enlarged, the blood and stool cultures were negative, and there is a marked leukocytosis, all not fitting into the picture of typhoid fever. In the usual case of typhoid fever going on to a fatal issue, the Widal does not get progressively stronger, since the Widal agglutination test depends upon the presence of antibodies in the patient's serum. It is well known that marked jaundice can give a positive Widal, even one as strong as this became; due to the presence of jaundice in this case, and the other things about the Widal that I have mentioned, I am going to disregard the Widal. Without the Widal, the picture loses most of the features suggesting typhoid fever.

The urinary findings could be explained on the basis of almost any terminal condition, and they would seem to be more likely to develop in a case in which jaundice was present.

Malignancy of the head of the pancreas must be considered, but the course of the illness is seldom as rapid as this one seems to have been.

Cholecystitis remains to be considered. In

the acute forms, the onset is usually sudden, with a chill, high fever, and sweats. While the last features are lacking, the pain, tenderness and rigidity in the right upper abdominal quadrant sound very suggestive. The blood count is quite characteristic of the more fulminating forms. Since this diagnosis more satisfactorily explains all the features of the case than any other, I will make that as my diagnosis. I believe she must have died from a pneumonia, although there is nothing on the record to suggest it.

Dr. Wilson: Mr. Able, what do you think about this case?

Student Able: I think that cholecystitis should be considered, but I believe that the fever would have gone higher with cholecystitis. And the jaundice means that the liver or the hepatic bile ducts must have been involved.

I think that carcinoma deserves serious consideration. I note that she had "hemorrhoids." If by that she meant bleeding at stool, the possibility of carcinoma of the intestinal tract becomes quite definite. The symptoms have apparently been present only five weeks, but that does not exclude the possibility of cancer. The pain in the region of the liver, with the deepening jaundice, suggests severe liver damage, and that could easily be explained on the basis of metastatic lesions in the liver. Of course sudden pain is not the common thing in metastatic carcinoma of the liver; usually the pain is gradual in onset and becomes progressively more severe. If there were a secondary carcinoma of the liver, that organ should have been enlarged; there is no note on the abstract as to the size of the liver. The low-grade fever is also suggestive of carcinoma.

Dr. Lynch: Why do you say fever with carcinoma of the liver?

Student Able: Possibly secondary infection.

Dr. Lynch: Oh, all right. But the carcinoma itself would not cause fever.

Dr. Wilson: Why do you talk about everything but typhoid fever?

Student Able: The jaundice could easily cause the positive Widal, and the other symptoms are not very suggestive of typhoid fever. If we assumed that typhoid fever was present in this case, the background for a cholecystitis would be quite clear; the typhoid bacillus com-

monly involves the gall bladder and the biliary radicles. However, I do not think that the fever was high enough for a cholecystitis. There should also have been a history of previous digestive symptoms referable to the gall bladder.

Dr. Wilson: There would have been previous symptoms only if the acute attack was an exacerbation of a chronic cholecystitis; an acute fulminating cholecystitis need not be preceded by minor gall bladder symptoms. What do you think the patient died of?

Student Able: I believe that she died of liver failure, as a result of extensive metastases to the liver. The primary lesion may have been in the gastro-intestinal tract. There is nothing on the abstract to suggest that something new developed to carry her off.

Dr. Wilson: We will have time for one more to discuss the case. Mr. Harrison?

Student Harrison: I agree with Mr. Able about the carcinoma. The van den Bergh test was not only indirect, but was also direct, indicating destruction or loss of liver tissue proper. The jaundice in carcinoma of the liver usually progressively deepens as it did in this case. As primary carcinoma of the liver is so rare, I believe that it must have been secondary in the liver, with the primary growth in the stomach or uterus or bowel. The fever and leukocytosis cannot be explained on the basis of the tumor per se, but they would develop as a result of necrosis and hemorrhage into the tumor nodules.

I have ruled out typhoid fever because the symptoms are not definite enough. From the record it would seem that the patient had not been confined to bed for the whole course of her illness, as her only symptoms seem to have been malaise and constipation. After five weeks typhoid fever should have given much more definite symptoms than that. The Widal test means little in the presence of jaundice, as has been pointed out. The gall bladder inflammation that comes on with typhoid fever is seldom this severe.

I cannot explain the sudden pain in the region of the liver, unless infection caused it.

Dr. Wilson: Dr. Rhame, you handled the case. What did you think?

Dr. Rhame: The history as recorded on the



chart is the same as she told me. But she was sicker than you might gather from reading the abstract. She had been in bed for 4 1-2 weeks when I saw her. She was so sick that she was very uncooperative. She refused to answer questions, insisting that she be let alone. She resisted examination, even of the abdomen, and would absolutely not permit a rectal examination. The pain she complained of was quite severe, and she was exquisitely tender in the right upper quadrant. She was dehydrated, her tongue was heavily coated, and she looked quite ill, although she stated that she had been perfectly well up until the onset of her present illness.

She had had a previous operation elsewhere, and I gathered that it was a hysterectomy, although I could not be sure.

Our diagnosis was typhoid fever, probably with cholecystitis, but after consultation we decided not to operate because of her generally poor condition. We thought that the inflammation of the gall bladder had probably extended into the liver, giving a cholangitis there. She was so tender over the liver area, and so uncooperative, that it was impossible to map out the liver.

Dr. Wilson: Dr. Rhame asked Dr. Cannon and me to see the patient in consultation. My own opinion was that all her acute symptoms were related to the liver area. I hesitated between acute cholecystitis complicating typhoid fever, and a primary empyema of the gall bladder. We did not place too much emphasis on the Widal, because, as all of you have noted, a positive result is usually gotten in the presence of jaundice. But from the history and the general appearance of the patient we believed that it was a case of typhoid fever, with cholecystitis. We did not think that her condition warranted operation, however.

Dr. Lynch: Is there any record of why the uterus was removed?

Dr. Rhame: No, we could not find that out.

Dr. Lynch: I asked that because in any case in which a suspicion of malignant neoplasm is entertained it is well to study carefully any previous operations the patient may have had. If her uterus had been removed for carcinoma, it would have been very important in making the differential diagnosis.

She had a carcinoma of the bowel, all right, but just how you men arrived at that diagnosis from the record is more than I can say. Possibly if her physicians had been able to get a more complete history, or had been permitted to examine her more carefully, a diagnosis could have been made, but I believe that the diagnosis is unwarranted with the data at hand.

As you can see here (demonstrating autopsy specimens), there was a large, fungating, cauliflower growth about the ileo-cecal valve, with marked narrowing of the lumen of the ileum by the tumor. This may have caused the constipation, which was one of her first symptoms. On the other hand, as the fecal content of the bowel is liquid as it passes through the ileum, the obstruction must be very marked before constipation is manifest. The small intestine proximal to this point was distended; possibly this distention had something to do with the abdominal discomfort for the last few days. This primary growth was voluminously infected, and this infection was doubtless the important factor in producing the fever and leukocytosis, although necrotic tumor tissue elsewhere, and the marked dehydration may have been factors, too.

From this primary neoplasm in the cecum, massive metastases developed in the liver. As you can see, the liver is about twice its normal size. Numerous umbilicated white nodules can be seen throughout its substance, replacing a large portion of the liver parenchyma, and doubtless interfering with the function of much of the remainder. The liver is markedly jaundiced, probably partially a result of direct destruction of liver cells, partially a result of obstruction to the biliary radicles by the tumor nodules. Death was apparently due to the extensive liver damage. There was no pneumonia, which might have been expected in such a case. Of course the infection of the primary tumor in the bowel was also an important factor in the fatal issue.

This case serves to emphasize two things. In the first place, symptoms, no matter how trivial-sounding, should be carefully inquired into, and in the case of hospital records, written down carefully. If the lead symptom of constipation had been followed up here, the diagnosis might possibly have been made. Constipation is such

a common symptom, and usually means so little in an anatomical way, that it is frequently completely passed over.

The other thing that is well brought out by this case is that a tumor must cause local dysfunction before it is brought to attention. The history is apparently of only five weeks duration. In this case this means, that partial intestinal obstruction was present for that length of time. In many of the internal organs a tumor has to reach an advanced stage before it is brought to attention. Not infrequently a tumor of the bowel is not recognized until it becomes markedly ulcerated and infected, causing diarrhoea and intestinal bleeding. These facts explain the poor prognosis in most cases of internal cancer, when compared to tumors of the skin or breast, for instance, where the whole process can be easily observed and detected early. I am reasonably sure that this tumor had already metastasized when the first symptoms were noted.

But this was also an unusually malignant tumor, considering its origin. Most carcinomas of the bowel are of relatively low grade malignancy.

Dr. Robert Wilson, Jr: On the basis of the record, I can see absolutely no justification for the diagnosis of carcinoma of the liver. Carcinoma of the liver usually gives an obstructive type of jaundice, commonly a complete obstruction. Under such circumstances there should have been bile in the urine (it was not noted here) and bile should have been absent from the stool.

Dr. Johnson: I think the failure to find bile in this urine must have been the result of an error. Jaundice as severe as this, with a three plus direct van den Bergh and an icterus index of 57, is bound to give a spilling of bile into the urine.

Dr. Peery: The sudden onset of pain in tumor cases is not infrequent, and deserves mentioning, as many have hesitated on that point today. Portions of a tumor frequently become necrotic as a result of insufficient blood supply. Blood vessels are not infrequently eroded as necrosis continues, and sudden hemorrhage may occur into a portion of a tumor. This sudden stretching of the tumor tissue may cause a sudden severe pain. Realizing this, a sudden pain should not cause difficulties in a case in which a tumor is suspected.

#### RIDGE MEDICAL SOCIETY MEETING

The Ridge Medical Society met in the Rutland Hotel the twenty fourth of February 1936, at seven twenty o'clock in the evening with a good attendance.

It had as its guests the members of the Ladies Auxiliary and Dr. and Mrs. R. W. Ball of the Health Department of Columbia, S. C., Mrs. Wilmer Suber County Health nurse of Lexington and Mrs. R. S. Marshall a nurse of Batesburg and Messrs. H. K. Dechart, Hazel, C. Corley and Lawler of the U. S. Public Health Service.

Dr. R. W. Ball gave an interesting lecture on various departments of public health work with special emphasis on infant mortality and maternal welfare, prenatal care, etc.

Mr. Dickert, engineer for the health department made an instructive talk on malaria, its cause and prevention with special emphasis on the mosquitoes and drainage and the economic loss.

Mrs. Hazel and Lawler exhibited a number of films which showed the various stages of development of the mosquitoes and their method of disseminating malaria or infecting people with it.

They also showed the development and methods of the yellow fever bearing mosquitoes.

They gave various illustrations and explanations.

Mrs. W. Suber spoke of some of her observations.

A number of questions as to matters concerning mosquitoes were asked Dr. Lawler.

The following were elected delegates to the State Medical Association:

Dr. J. N. Crafton from Edgefield County.

Dr. O. D. Garvin from Saluda County.

Dr. W. W. King from Lexington County.

Supper was served in the spacious dining room where much merriment ensued.

Short amusing talks were made by some of the visitors and members.

W. P. Timmerman, Secretary.



## WOMAN'S AUXILIARY

### SOUTH CAROLINA MEDICAL ASSOCIATION

#### ADVISORY COUNCIL

Dr. J. Heyward Gibbs	Columbia, S. C.
Dr. E. A. Hines	Seneca, S. C.
Dr. William A. Boyd	Columbia, S. C.
Dr. Kenneth Lynch	Charleston, S. C.
Dr. J. W. Bell	Walhalla, S. C.

#### OFFICERS

President, Mrs. Clarence E. Owens	Columbia, S. C.
President-Elect, Mrs. Frank Strait	Rock Hill, S. C.
First Vice President, Mrs. Izard Josey	Columbia, S. C.
Second V-President, Mrs. J. Warren White	Greenville, S. C.
Cor. & Rec. Secretary, Mrs. Berrien Kendall	Columbia, S. C.
Treasurer, Mrs. Thomas A. Pitts	Columbia, S. C.

#### COUNCILLORS

Mrs. L. J. Blake	Spartanburg, S. C.
Mrs. Dave Bigger	Rock Hill, S. C.
Mrs. J. R. Dunn	Sumter, S. C.
Mrs. Riddick Ackerman	Walterboro, S. C.
Mrs. Price Timmerman	Batesburg, S. C.

#### STATE CHAIRMEN

Student Loan Fund, Mrs. L. O. Mauldin	Greenville, S. C.
Mrs. C. P. Corn	Greenville, S. C.
Hygeia, Mrs. W. C. Abel	Columbia, S. C.
Program, Mrs. J. Warren White	Greenville, S. C.
Organization, Mrs. Izard Josey	Columbia, S. C.
Public Relations, Mrs. S. O. Holman	Timmons ville, S. C.
Historical, Mrs. H. M. Stuckey	Sumter, S. C.
Publicity, Mrs. E. Clay Doyle	Seneca, S. C.
Jane Todd Crawford Mem., Mrs. J. L. Bundy	Rock Hill, S. C.

#### CONVENTION CALL

The State Convention of the Auxiliary to the South Carolina Medical Association will be held at the Poinsett Hotel in Greenville, April, 21, 22 and 23 with the Greenville Auxiliary, of which Mrs. T. R. Wilson is President, acting as hostess. The hotel is holding in reserve the entire ninth floor for members of the Auxiliary who wish to attend. The manager is very anxious to know the number who would like to make reservations at this hotel. Please notify Mrs. Clarence E. Owens, of Columbia, immediately, so she may in turn notify the Chairman of Committee on Arrangements in Greenville.

For each twenty paid up members or fraction thereof in your County Auxiliary, in addition to yourself, you are entitled to one delegate and one alternate. The alternate may serve in the absence of the delegate. Will you please elect your delegates and alternates at the next meeting of your Auxiliary if you have not already done so and send their names to me immediately so the proper number of credential cards may be sent in due time.

All County Presidents are members of the Executive Board and are urged to be present on the evening of the 21st when the Board will meet to consider important matters.

A most delightful business and social program has been arranged by Mrs. J. L. Sanders, the Convention Chairman.

Mrs. Clarence E. Owens,  
President.

#### LETTER TO ORGANIZATION CHAIRMEN

Among the other good things the New Year has brought to you I hope it has given you increasing zeal and fortitude regarding your Medical Auxiliary work!

I am so interested in knowing how your Auxiliary is progressing in securing new members and keeping alive those already joined. Should any new doctor's wives move into your community please ask them to join your unit, and if there are other ought-to-be Auxiliary members try again to create in them a sympathy and an interest in our work, stressing especially our main goal—the Student's Loan Fund—and that we as an organization hold ourselves in readiness to aid, when called on, the medical profession. Remember that the more members in an organization the more alive it will be; more personal contacts, greater variety of views and talents, and a larger, hence more far reaching work.

I am working on the organization of new Auxiliaries in several towns and hope to have this work complete in a short while. It is to you, however, as organization chairman of your Auxiliary, that I am looking to for help in increasing membership and in the very important work of keeping alive the interest of your present members.

With every good wish for your success in this undertaking. I am

Yours very truly,

Elizabeth Douglas Josey,  
Organization Chairman  
Auxiliary to S. C. Medical Association.

Columbia, S. C.  
Jan. 24, 1936

## COMMUNICATION ABOUT JANE TODD CRAWFORD MEMORIAL

The Jane Todd Crawford Memorial, as you doubtless know, is a project of the Auxiliary to the Southern Medical Association, and, as we are one of its branches, the Board would like for us to do what we can towards it.

First about Jane Todd Crawford—in case you are not familiar with her history—she was a Kentucky woman, the first in this country upon whom ovariectomy was performed. The operation was done without anaesthesia by Dr. McDowell, to whom a memorial has already been established, and it is to commemorate the courage of this pioneer woman who rode in from the mountains on horse-back and offered herself for the advancement of experimental science, that the movement has been started. What form of memorial it will be whether scholastic, endowment or statuary has not been decided, but we are asked each year to give something towards it until the work is completed.

Will you please bring this before your Auxiliary at its next meeting, and request five or ten cents per member to be applied to this fund? Columbia has pledged five cents per paid up member, and I hope that every member in the State will do as much, or more.

Please send your contributions direct to our State Treasurer, Mrs Thos. A. Pitts, Columbia, S. C.

I wish you success and thank you for your assistance.

Sincerely yours,

Mrs. J. L. Bundy

Rock Hill, S. C.

Feb. 4, 1936

## REPORT TO MRS. SIMONDS, CHAIRMAN OF PUBLICITY FOR THE AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

Greetings and best wishes from South Carolina for a successful Auxiliary year:

The State Chairman for Press and Publicity is one of our most efficient members, Mrs. Clay Doyle of Seneca, so should you have any questions to ask or any instructions to give if

you will direct your communications to her you should receive a prompt answer.

South Carolina stands squarely back of you in your Auxiliary work and if there are any requirements new items, etc, which should come from Mrs. Doyle or the State President I should appreciate information relative to same.

I have stressed the necessity of appointing a Chairman of Publicity in each unit but there are some Auxiliaries which have failed to comply. The following is a list of the names of Chairmen which I have been able to secure and where I have failed I am supplying the names of the Presidents.

Mrs. Roddy Miller, Rock Hill, President.

Mrs. Floyd Rodgers, Columbia, Chairman.

Mrs. W. M. Carpenter, Greenville, Chairman.

Mrs. Carroll Brown, Walterboro, President.

Mrs. J. C. Pepper, Easley, President.

Mrs. W. C. Whitesides, York, President.

Mrs. L. J. Blake, Spartanburg, President.

Mrs. D. G. Barton, Anderson, President.

Mrs. O. T. Finklea, Florence, President.

Mrs. J. D. Waters, Saluda, President.

Mrs. Richard Baker, Sumter, Chairman.

Mrs. Clay Doyle, Seneca, Chairman.

Most cordially yours,

Mrs. C. E. Owens,

President of the Auxiliary  
to the South Carolina  
Medical Association.

Columbia, S. C.

January 22, 1936

## SPARTANBURG MEDICAL AUXILIARY MEETING

The President's Birthday Ball which was given at the Franklin Hotel, Thursday, January 30th, was sponsored by the Women's Medical Auxiliary of Spartanburg with Mrs. H. E. Mason general chairman. The ball room was beautifully decorated in patriotic colors and flags. In spite of the inclement weather the ball was well attended. A huge birthday cake was raffled off. Delicious refreshments consisting of punch and cookies were served. The purpose of the ball was to raise funds for crippled children, 30 percent going to the Warm



Springs, Ga. fund and 70 percent to the crippled children of Spartanburg County.

Mrs. P. A. Smith,  
Publicity Chairman.

### SPARTANBURG MEDICAL AUXILIARY MEETING

The Woman's Medical Auxiliary met with Mrs. James Sparkman, Gadsden Court, on Monday, January 27th, with Mrs. Sparkman, Mrs.

C. W. Bailey and Mrs. Dennie Hill hostesses. The guest of honor, Mrs. Clarence Owings, of Columbia, S. C., the State President of the Auxiliary, made an interesting talk on duties of the organization. Dr. Ruth Franks of Converse College gave an interesting account of her visit in India. After the meeting a social hour was enjoyed and delicious refreshments were served.

Mrs. P. A. Smith,  
Publicity Chairman.

## SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

### "INTRASPINAL INJECTION OF ABSOLUTE ALCOHOL FOR INTRACTABLE PAIN"

The relief of intractable pain is an ever present problem. Naturally the most desirable way is to remove the cause and thus effect a cure. However only too often this is out of the question, especially when it is due to far advanced malignant disease. In some cases the suffering is so intense that resort to any measure that gives promise of relief seems justifiable. On the other hand, when complete recovery is impossible, it does not seem advisable to subject these patients to a major operation with its attendant discomforts. There is needed some simple method of relieving pain in these incurables so as to make their last days more comfortable.

Opium has long been used and is still the main stand by. While we would not do without it, its disadvantages and limitations are too well known to need discussion.

Cordotomy has been the answer in some cases, but the fact that it is a major operation makes it unsuitable for many others. In the same category are other operations for section of the nerves in various regions, especially the pelvis.

A simple procedure is proposed by Dr. W. D. Abbott of Des Moines, Iowa (Am. J. Surg. XXXI 351 (Feb.) '36). It is the intraspinal injection of absolute alcohol. He reports its

use in 25 patients, in 21 of whom it gave relief to intractable pain.

The patient is placed on the side, with the painful side up, and is flexed horizontally and vertically. The needle is inserted into the spinal canal at the desired level and 1 cc of absolute alcohol is injected slowly, taking four to five minutes. The same position is maintained for about twenty minutes. The patient is then placed in bed on his back with the head lowered for 24 hours. After this he is allowed to be up. If the pain is bilateral the opposite side is injected after five days. If relief from pain is not complete, a second injection is made a segment higher or lower. Immediately after the injection some patients complain of numbness in the distribution of the segment, but this usually passes off in two to three days. In two cases there was transient weakness in the extremity. This gradually subsided. It is of particular interest that there was no loss of bladder or bowel control. There was one death in the series. It occurred in a patient already moribund from general carcinomatosis.

Most of the patients treated were restored to a satisfactory state of health once the pain was relieved. Among them were cases of neuralgia, neuritis and arthritis. In these cases other methods had been tried and had failed.

There were some suffering from incurable diseases such as advanced carcinoma, diabetic gangrene, and tuberculosis of the spine. In the series of 25 cases there were two failures, two

instances of partial relief, and one death. In 21 cases relief was afforded from intractable pain.

Editor's Note: In this column an attempt is made to report advances in the knowledge of surgery. Accordingly many of the procedures

are new and have not been sufficiently proven to warrant their general use. While the intraspinal injection of alcohol is easily accomplished, it must not be taken lightly as dire consequences in the nature of nerve and cord degeneration may result.

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## SOUTH CAROLINIANA

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J. I. WARING, M.D., CHARLESTON, S. C.

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### CERTIFIED SPECIALISTS

Whether the profession and public are right or wrong in complaining at times about the supposed growth of specialism, or whether the chief concern of both has been with the specialist's fee, this editor does not pretend to judge. That "specialists" have been much too easily self appointed in the past, and that both medical and public opinion has been biased by the pride and protestations of some of our pseudo "specialists," seems to be a general idea.

Medical education was satisfactorily elevated and regulated through the activities of the American Medical Association. In recent years, through the efforts of men concerned with maintaining the level and reputation of their particular specialties, a number of Examining Boards have come into existence and have functioned satisfactorily in establishing standards for those who profess to have special knowledge in one branch of medicine.

The first Board, the American Board of Ophthalmology, was organized in 1916. The American Board of Otolaryngology was organized in 1924. The American Board of Obstetrics and Gynecology in 1927 and the American Board of Dermatology and Syphilology in 1932. Following these pioneer efforts have come the American Board of Pediatrics, the American Board of Psychiatry and Neurology, the American Board of Radiology, the American Board of Orthopedic Surgery and the American Board of Urology. At present efforts are being made to provide certifying Boards for internists, surgeons and pathologists. Members of these examining Boards are appointed by the special

societies and the American Medical Association.

Over all of these Boards there has come into being the Advisory Board of Medical Specialties. This Board acts as a coordinator of procedure and standardization. This Board will also publish a register of the licentiates of all the Boards. The Directory of the American Medical Association will include lists of the licentiates also.

It is not expected that any of these Boards will go out into the by-ways and compel candidates to come forward.

These Boards differ from State and National Examining Boards in that they do not confer license to practice but only certify that a physician has had certain experience and training and that he has shown by examination that he is qualified to practice a particular branch of medicine.

Sometimes the trouble and expense of securing recognition by one of the Boards seems to outweigh the advantage of certification, and many qualified physicians in South Carolina have for various reasons failed to show interest in this movement. Nevertheless, encouragement of the establishment of standards and the recognition of the specialists' qualifications would seem to be highly desirable, and the physicians of the state would benefit themselves and their specialties by supporting the various Boards.

There is no necessary implication that the doctor who fails to obtain a certificate is not qualified to practice his specialty, nor does the general practitioner need such a certificate. Nevertheless the general man can feel sure that those specialists who have qualified with their



respective boards are qualified to take care of patients whom he may refer to them.

The following is a list of South Carolinians who have obtained certificates in their specialties. This is compiled from information obtained from the several Boards.

*American Board of Ophthalmology—*

Edw. F. Parker, Charleston.

D. S. Asbill, Columbia.

S. R. Lucas, Florence

E. W. Carpenter, Greenville.

J. W. Jervey, Greenville.

J. W. Jervey, Jr., Greenville.

*American Board of Otolaryngology (to 1934)—*

W. H. Nardin (deceased), Anderson.

E. F. Parker, Charleston.

W. J. Bristow, Columbia

M. R. Mobley, Florence.

J. W. Jervey, Greenville.

J. L. Sanders, Greenville.

E. B. Gray, Spartanburg.

*American Board of Obstetrics and Gynecology*

R. L. McCrady, Charleston.

L. A. Wilson, Charleston.

*American Board of Dermatology and Syphilology—*

J. R. Allison, Columbia.

*American Board of Pediatrics—*

E. A. Hines, Seneca.

R. M. Pollitzer, Greenville.

J. I. Waring, Charleston.

*American Board of Psychiatry and Neurology (None).*

*American Board of Radiology—*

O. D. Baxter, Sumter.

P. D. Hay, Florence.

W. S. Judy, Greenville

T. A. Pitts, Columbia.

F. D. Rodgers, Columbia.

H. Rudisill, Charleston.

W. M. Sheridan, Spartanburg.

R. B. Taft, Charleston.

*American Board of Urology—*

T. M. Davis, Greenville.

J. J. Ravenel, Charleston.

*American Board of Orthopedic Surgery—*

J. W. White, Greenville.

## THE REPORT OF THE SECOND DISTRICT MEDICAL ASSOCIATION, JANUARY 31, 1936

The Second District Medical Association held its semi-annual meeting at The Summerland Hotel near Batesburg at five (5:00) o'clock P. M. January 31, 1936.

Dr. W. P. Timmerman of Batesburg presented an unusual case of a negro child born with a large tumor mass over lower spine and buttocks which was successfully removed. This was discussed by Drs. Keisler, R. Timmerman, Bunch and Pitts.

The first paper of the program was by Dr. George McCutchen on Burns. He classified burns and discussed Gentian Violet treatment of eighty (80) cases and reviewed other methods, and complications and grafting. This paper was discussed by Drs. Frontis, Keisler, Moore and Bunch.

The next paper was Infant Feeding By Dr.

T. D. Dotterer. Dr. Dotterer said that slightly more than half of the deaths in the first year occur in the first month. He discussed fresh cow's milk, and advised against feeding it raw. He also covered powdered, evaporated, and lactic acid milk. This paper was discussed by Drs. J. H. McIntosh and Keisler.

The last paper on the program was Milk-Borne Diseases by Dr. O. B. Mayer. Dr. Mayer discussed the milk route in the spread of diseases, and particularly of epidemics of typhoid fever, scarlet fever, and septic sore throat. He also told of the spread of T. B. in milk, and gave the methods of grading milk.

Dr. W. P. Timmerman read resolutions on the death of Dr. Samuel E. Harmon, and a motion was brought by Dr. W. P. Timmerman for an executive committee, one being chosen from each county to care for the interest of the society in that county.

Respectively submitted,

**David F. Adcock, Secretary.**

## BOOK REVIEWS

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**SEDGWICK'S PRINCIPLES OF SANITARY SCIENCE AND PUBLIC HEALTH.** Rewritten and Enlarged. By Samuel C. Prescott, Sc.D., Dean of Science and Head, Department of Biology and Public Health, and Murray P. Horwood, Ph.D., Associate Professor of Biology and Public Health. Both of the Massachusetts Institute of Technology. New York, The MacMillan Company, 1935, price \$4.25.

The original contribution of this author in 1901 has been a classic in American Public Health literature. There has, of course, been a tremendous development along all lines of preventive medicine. The broad general principles have now become household words throughout the world, thanks to such pioneers as Sedgwick. This revision by Prescott and Horwood, former co-workers, is noteworthy for enlarged details and much new matter. The chapter on public health administration is both historical and comprehensive. Various phases of the Federal Government's interest in Public Health have been noted, as well as the great foundations such as the Rockefeller Foundation. Child health comes in for due consideration. The sanitation of summer camps has been given an important place in the book, since this is one of the most spectacular problems in modern life. A very interesting chapter is that of health, old age, and disease. A considerable section has been devoted to milk supplies and of course to other foods.

**AN INTRODUCTION TO PUBLIC HEALTH,** By Harry S. Mustard, M.D., Associate Professor, Public Health Administration, The Johns Hopkins University; Director, Eastern Health District, Baltimore, Md.: Lecturer on Public Health and Sanitation, The Johns Hopkins Hospital School of Nursing. New York, The MacMillan Company, 1935, price \$2.50.

The author of this volume is well known in South Carolina. He has had excellent training in public health in many of its phases, and now as a teacher in one of the world's greatest Universities is in position to speak authoritatively. The book is designed to cover rather a neglected field; that is, to give the student of public health a proper

perspective. Building on such a foundation, the unfolding of the fascinating development of public health should be inspiring and create a greater urge for subsequent studies. The chapters are as follows:

- I. The Background and Associations of Public Work
- II. Vital Statistics
- III. Organization and Administration of Public Health Work
- IV. The Acute Communicable Diseases
- V. Tuberculosis As A Public Health Problem
- VI. The General Diseases
- VII. Sanitation
- VIII. The Individual and His Hygiene
- IX. Childbearing and Its Relation to the Public Health
- X. The Hygiene of Infancy and Young Children
- XI. School Health Service
- XII. Public Health Aspects of Certain Non-Communicable Diseases

**INFANT NUTRITION, A Textbook of Infant Feeding for Students and Practitioners of Medicine.** By Williams McKim Marriott, B.S., M.D., Professor of Pediatrics, Washington University School of Medicine: Physician in Chief, St. Louis Children's Hospital, St. Louis. Second Edition. St. Louis, The C. V. Mosby Company, 1935.

Pediatricians and medical men in general have looked forward with keen interest to a revision of this book. The St. Louis Children's Hospital has contributed greatly to the advancement of Pediatrics, particularly, along dietary lines. The author of this book has made important observations on the role of the infections associated with nutritional disturbances. He has also added much to the knowledge of artificial feeding of infants with the evaporated milks, notably, the various forms of acid milk. The chapter on The Vitamins is up to date and embodies the results of the investigations of the last few years. This is one of the practical books for the general practitioner as well as for those who are interested in pediatrics as a specialty.

**RESOLUTIONS ON THE DEATH OF DR. SAMUEL E. HARMON ADOPTED BY THE SECOND DISTRICT MEDICAL ASSOCIATION JAN. 31, 1936**

Whereas Dr. Samuel E. Harmon of Columbia, president of the South Carolina Medical Association, and who for a long while was

councilor of this The Second District, and who manifested an unceasing interest in matters pertaining to the welfare of the medical profession and especially of this particular section and district, and abhorred and condemned insincerity and deception, fell peacefully asleep the twenty sixth of December, 1935.



Therefore be it resolved: 1st, that in the passing of Dr. Harmon our society and our profession has lost one of their most active, sincere and useful members.

Resolved 2nd: That our sympathies and best wishes be and are hereby extended to his bereaved family.

Resolved 3rd: That a permanent record be made of these resolutions and be inscribed in our minutes.

Resolved 4th: That we bow in silent meditation for a moment as a token of respect to him.

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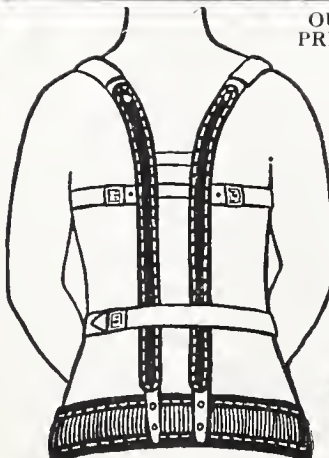
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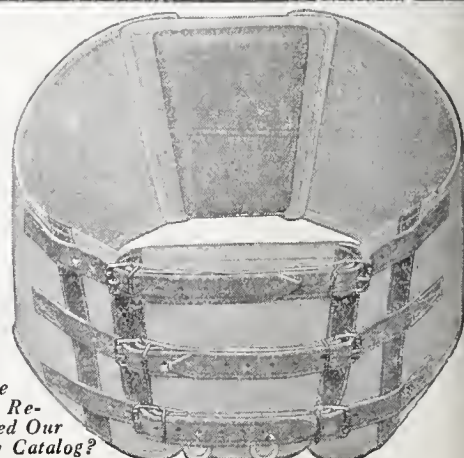
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# THE JOURNAL

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### THE EXTRA-DIABETIC USES OF INSULIN

By

ROBERT WILSON, Jr., M.D.,  
Charleston, S. C.

The natural sequence of events, following the introduction of any new therapeutic agent or method, has plotted a similar course throughout the history of medicine. Characteristic of Medicine today is its insistence upon rationalization, but equally important for advancement is the empiric trial of drugs and methods in conditions other than the ones for which they were originally intended. The wide-spread use of fever-therapy, the treatment of lobar pneumonia with pneumothorax, the administrations of the arsenicals in conditions other than syphilis are but a few examples of this tendency. It is therefore not surprising that the introduction of a drug so spectacular in its specific effect as insulin should occasion its trial in many conditions other than diabetes mellitus, for which it had been sought for years. A brief survey of the literature shows that insulin has been suggested as a therapeutic agent in the management of such widely differing diseases as pneumonia, dementia paralytica, progressive muscular dystrophy, asthma, peptic ulcer, morphine addiction, erosions of the cervix of the uterus, ingrowing toenails, and many more. It should not be aniss, therefore, to inquire into the rationale of its action in a few of the conditions for which it has been recommended, and to try to formulate some basis for direction as to future uses.

Before considering any of the newer uses of insulin, it is essential to review briefly the pres-

ent state of our knowledge regarding its physiological activity, which has been derived very largely from two main sources, observations upon its effect on diabetic individuals, and animal experiments(1). It has been shown that deductions from one or both of these sources of information cannot always be applied to the normal, non-diabetic patient, and that likewise the sum of our knowledge is not yet sufficient to interpret all observations. However, certain things have been definitely established, and, while others remain in question, we may accept without any reasonable doubt the fact that the major role of insulin is in the regulation of important phases of carbohydrate metabolism:

1. It lowers the blood sugar in diabetic patients, and in normal and depancreatized animals;
2. It effects a transfer of sugar from the blood into the tissues, and is concerned in the conversion of glucose into glycogen;
3. In the diabetic patient and in certain animals, insulin administration results in the storage of glycogen in the liver;
4. Following its use in the diabetic, there is a disappearance of ketone bodies from the urine and blood;
5. Insulin accelerates the consumption of sugar in the excised mammalian heart.

Whether or not insulin is at all directly concerned with the combustion of fat or in the conversion of fat into glycogen is not established, but it is certain that at least indirectly, by providing energy released in the metabolism of carbohydrate, it allows for the complete oxidation of fat and prevents the formation of ketone bodies.

In point of priority, as well as in being the

Read before the Spartanburg County Medical Society, Spartanburg, S. C., November 25, 1935.



most firmly established of its extra-diabetic clinical uses, the administration of insulin in certain cases of malnutrition deserves primary consideration. As early as 1923, insulin was suggested for the treatment of infantile inanition by Pittfield(2), who reported considerable success in a number of such cases. Since that time, numerous authors have commented on its effectiveness, particularly in undernourished adults, and have acclaimed its success in many cases in which other measures resulted only in failure. In a recent and very carefully studied series of such cases, Blotner(3) obtained excellent results from the administration of 10 units of insulin before each meal. Of his 79 patients, normal in every way except for malnutrition, all gained weight and most of them held the weight gained. In this group, as well as in cases reported by other observers using a similar technique, the patients were all encouraged to eat freely and a high calory diet was frequently used, but in many instances dietary measures alone had failed to increase the weight before the institution of insulin therapy.

*Illustrative Case:* A white woman, aged 27, was admitted to the Roper Hospital on July 26, 1934, with a story of vomiting of 3 months duration and the loss of 25 pounds in weight. Her symptoms had begun when she and her husband had separated, at which time she weighed 130 pounds. There were many other minor complaints of a typical neurotic type. Physical examination showed nothing abnormal except for undernutrition, wt. 105 lbs. Laboratory tests, including X-ray of the Gastro-Intestinal tract, were likewise negative. A diagnosis of Psychoneurosis was made, with secondary malnutrition. Various dietary manipulations were tried without success, the weight gradually falling to 101 pounds and the symptoms of vomiting being unrelieved. Insulin, 4 units before each meal, was begun on Aug. 14th; the patient gained 2 pounds in weight and vomiting diminished considerably, but she insisted on leaving the hospital after only 5 days of this treatment. During the next 7 months her symptoms recurred and gradually became more pronounced, with progressive loss of weight, until March 1935, when she reached 87 pounds. A high calory diet with forced feeding, glucose by

vein, yeast, cod liver oil, were all tried without success. On March 21st, insulin, 5 units before each meal, was begun; there was an initial loss of 2 pounds in weight during the first 2 weeks, after which there followed a steady, rapid rise to 116 pounds on June 3rd, when the insulin was discontinued. After this time the patient's weight continued to increase slowly until August 1st, when 130 pounds was reached, which has been maintained until the present time.

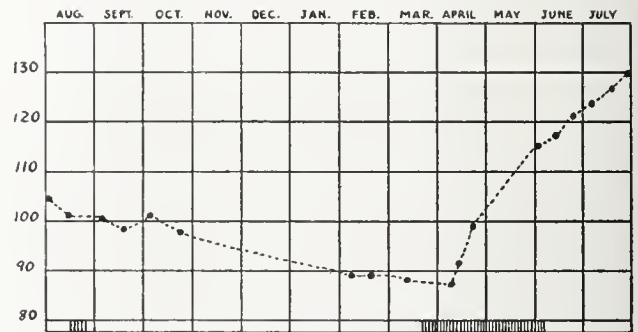


FIG. 1. Chart of patient's weight showing gain during period of insulin administration (shaded lines represent time during which insulin was given).

*Comment:* All cases similar to the one cited above, in which vomiting of neurotic origin plays a large part, are open to criticism inasmuch as there is a decided psychological element to the method by which insulin must be administered. This, in itself, might in some instances provide a considerable stimulus to the appetite and allow a gain in weight to result merely from breaking the vicious cycle of vomiting. However, a great many of the reported cases cannot be explained on this basis. The exact mechanism by which insulin is helpful in the attainment of results has not been clearly established. It is, of course, merely an adjunct to the essential feature of the treatment, namely, a high caloric intake. We cannot presuppose a lack of insulin in these patients, for if this were so, they would necessarily be diabetic. However, it is entirely reasonable to assume that an increased amount of available insulin might not only stimulate the appetite but also facilitate the combustion of carbohydrate, its conversion into glycogen, the storage of the latter, and the conversion of these materials into fat. Blotner(4) has shown in one case in which biopsy was done before and after the insulin regimen that the subcutaneous fat increased considerably in thickness and that the

individual fat cells more than doubled in size. Although the exact role of insulin in this latter phase of metabolism has not been established, it is sufficient at the present time to be assured of the fact that it is often of distinct advantage.

Closely related to the administration of insulin in simple malnutrition is its use in active tuberculosis as an aid in stimulating the appetite. In the hands of some observers, this has proven to be a valuable adjunct to the other usual therapeutic measures. In a report by Banyai and Jurgens(5), 43 non-diabetic patients with active tuberculosis are cited; of 24 moderately advanced cases treated with 5 to 10 units before each meal, the appetite improved in 19 and 13 gained weight. In 19 far advanced cases, 11 showed an improvement in the appetite, and there was a gain in weight in 9. Fever is said to be a contraindication for the use of insulin, but no good reason is advanced as to why this should be so.

*Illustrative Case:* A white woman, aged 34, gave a story of gradual loss of weight of one year's duration and massive swelling of the extremities for one week. Physical examination, substantiated by X-ray, showed extensive bilateral pulmonary tuberculosis. Her weight was 68 pounds. Because of an almost complete absence of appetite, 5 units of insulin before each meal was begun on May 5, 1934. After 3 1-2 weeks there had been a gain of 13 pounds in weight and the appetite had improved to a large extent.

In cases of persistent vomiting secondary to a wide variety of causes, the use of insulin has been frequently suggested. Hyperemesis gravidarum, reflex vomiting from organic lesions in the stomach and duodenum, and vomiting of neurotic origin have all been treated with insulin with indifferent success. In no instance has there been shown an essential lack of endogenous insulin and for this reason its use in these conditions has been largely abandoned. However, its occasional value is sufficient to justify a trial in certain cases where other measures have been inadequate, and at times good results are obtained. The rationale of such therapy is little understood; the psychological element associated with a hypodermic injection and the

fear of insulin reactions undoubtedly play a large part in its effectiveness.

*Illustrative Case:* A white woman, aged 63, entered the hospital on Dec. 28, 1933, with a story of epigastric pain, nausea and vomiting, constipation, and loss of weight extending over a period of about two years. X-ray examination showed extreme gastroparesis and a non-obstructive duodenal ulcer. Sippy diet was begun with some relief of pain, but continuous nausea persisted until Jan. 6th, when insulin, 10 units twice a day, was begun. There was almost immediate relief from nausea and vomiting. The dosage of insulin was reduced to 5 units twice daily until Jan. 28th, when it was entirely discontinued, without recurrence of symptoms. During this time there was a gain in weight of about 8 pounds. Re-examination by X-ray at the end of one month's treatment showed much less deformity in the duodenum and was interpreted as being significant of healing in the ulcer crater.

One of the large group of conditions in which the use of insulin has been suggested is that group of diseases in which arteriosclerosis plays the leading role. Beale(6), assuming that insulin enhances the utilization of carbohydrate in the normal individual and that body fats are "burned in the fire of carbohydrate combustion," has advocated the administration of insulin in a wide variety of conditions in which arteriosclerotic degeneration is the important etiologic factor. This author reports good results in the treatment of arteriosclerotic gangrene, angina pectoris, bed-sores, chronic leg ulcers, thrombo-angiitis obliterans, and cases with manifestations of cerebral arteriosclerosis; insulin was given at intervals, usually once or twice a week, and always followed by orange juice. The rationale of this form of therapy is that increased carbohydrate metabolism will favor the dissolution of fat deposits in the inner walls of the peripheral vessels. While all of his cases were stated to have improved, no pathologic evidence is offered to substantiate this supposition. One such case, treated in this manner, may be of interest:

*Case Report:* A white woman, aged 68, was first seen on Jan. 13, 1935, complaining of considerable vertigo, weakness, and moderate



dyspnea on exertion. She had had a mild attack of congestive heart failure, on a hypertensive basis, in 1934. Physical examination showed nothing of particular significance except for a blood pressure of 170-105, rising later to 180-110. Ophthalmoscopic study disclosed considerable narrowing and tortuosity of the arterial vessels, with some intimal inbuilding, and the consultant suggested the use of insulin. This was begun, 5 units being given at 3-day intervals for approximately 6 weeks. The blood pressure gradually fell to 134-90, remaining at this level for some time. Vertigo began to improve after the second week of this treatment and eventually disappeared entirely. Throughout this period, digitalis and potassium iodide were being given simultaneously with the insulin. Three weeks after discontinuing insulin, the patient came down with a very severe attack of pellagra, from which a slow improvement was made following the institution of treatment with liver extract. Up to the present time, there has been no return of vertigo, but whether insulin was actually of value in this case is questionable, as the vertigo might easily have been a prodromal symptom of pellagra.

It is very difficult to see how an occasional dose of insulin could possibly be of any value in cases such as the one described above. The degenerative changes that go on in the blood vessels throughout the body are usually progressive and always deepseated, and the nature of the lipoid deposits in the vessel walls is such that it would indeed take a credulous imagination to believe that they could be affected by such transitory action as is the result of insulin. And if this were so, we should expect that the well-regulated diabetic patient taking insulin would be one of the last to develop arteriosclerosis, whereas the incidence of arteriosclerosis is particularly high in this disease. However, in the treatment of one of the conditions mentioned above, angina pectoris, the use of insulin has been found by K. S. Smith (7) to be of value in certain selected cases; this is explained upon the known fact that insulin enhances the metabolism of glycogen in the heart, and upon the idea that in such cases the anginal pain is the expression of inadequacy in the sup-

ply of available glycogen. The latter is a more acceptable explanation, but I have had no occasion as yet to put it to a therapeutic test.

In acidosis of non-diabetic origin, in post-operative surgical cases, and in the wide range of conditions in which the intravenous injection of glucose is of distinct benefit, the question often arises as to whether or not insulin should be given along with the glucose. In most cases of these types there is no demonstrable lack of endogenous insulin and there is usually no reason to presume that the patient cannot metabolize the carbohydrate administered in this, its simplest form. However, observations upon diabetic patients have established the fact that infections lower the carbohydrate tolerance, and it is easily possible that other debilitating states might have a similar tendency. A rule which some physicians follow with advantage is that if sugar appears in the urine after the intravenous administration of glucose, then insulin is given with all subsequent injections, but it is not used if the urine remains sugar-free. The dosage of insulin necessary in any single case can be found only by the trial-and-error method; the amount of carbohydrate utilized by a unit of insulin is so variable in the same individual as well as in different individuals that no rule can be laid down as to how much would be essential.

In attempting to evaluate the effectiveness of any particular method of treatment, large numbers of cases must be studied before a reasonable conclusion can be reached. This is especially true in the types of conditions under discussion this evening. At the present time, there is no doubt but that the pendulum is still swinging toward an increase in the range of usefulness of insulin. It is inevitable that a reaction will set in, with considerable limitations in its clinical indications. The effectiveness of insulin is well established in malnutrition, in stimulating the appetite, and in cases in which there is definitely proved alteration in the carbohydrate metabolism, and its use in these conditions will continue. In the other types of conditions, in the obliterative lesions of the blood vessels, in effecting a rapid healing of ulcerations, in angina pectoris, a final opinion as to its usefulness must be reserved. Until we

have at hand more accurate methods for the study of glycogen metabolism in all of its ramifications, we must necessarily work under a considerable handicap. It is highly probable that insulin will not be found to be a particularly effective agent in all of the conditions for which it has been recommended, or at least a safe one, but we must know a great deal more about its exact physiology in the body before the final verdict can be passed.

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#### ACUTE LARYNGEAL STENOSIS IN CHILDREN

By

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Greenville, S. C.

Our purpose in presenting this topic is three fold, first because it is one in which we are greatly interested, secondly to compare our records of twenty three years ago with the present day results and procedures and third to analyze records at the General Hospital during the last four years.

Twenty three years ago I reported a series of fifteen cases of Intubation performed during the two preceding winters with a mortality of 13 per cent covering a territory extending from Westminster to Union and from the upper part of this County into Laurens County. Some of

these cases were one hundred miles apart and fifty miles from my office. The roads were firm hard clay in dry weather and the most luxurious deep slippery ruts and holes in wet weather. There were very few phone lines through the country and only those doctors whose wives could endorse for them owned an automobile (describe auto). Folks came for the doctor with a mule or horse and usually arrived in the afternoon or night. Most of my visitations were done at night, one drove as far as the roads went and then got a neighbor to take him the rest of the way in a wagon or some other horse drawn rig. Thus when the doctor arrived precious time had been lost

Few of these cases were seen during the interval between intubation and extubation unless they coughed up the tube and there was time to arrive before death, several did extubate themselves but only one died. This may suggest to you that they were mild cases, the contrary is true. People did not go for a specialist in those days unless the patient was in extremis and when we arrived the babies were usually blue, with swollen faces and necks and great supra sternal tugging and protruding of eye balls.

None of these cases were Tracheotomized, the parents would not permit it because there was no one to properly nurse the case and because the technique was not so highly developed as now.

Hospitals tabooed such cases, most of them were called membranous croup by the family doctor and the first case I succeeded in having admitted to the hospital was on this distinction, my conscience was not serene and I advised isolation. This was done by caring for the patient in a lavatory.

I now wish to report a series of sixty two cases occurring during the years 1931-32-33-and 34 at the General Hospital. This does not include private cases attended outside of this institution.

Total City Hospital 1930-34	62
Total Age in Months	1962
Average in Months	3.164
Intubations	22
Tracheotomies	31
Both Tracheotomies and Intubations	10



Mortality 18 Cases -----	29%
Eight Tracheotomy cases had peanut Broncho-pneumonia.	
Per cent deaths Intubation -----	13
Per cent deaths	
Intubation and Tracheotomy -----	70
Per cent death Tracheotomy -----	26
Laboratory reports Positive	
Diphtheria -----	33
Laboratory reports Respiratory	
Type Infection -----	14
Laboratory reports Negative -----	4
Laboratory reports None on record --	4
<i>Cause of Death</i>	
Broncho-pneumonia -----	6
Toxic -----	2
Cardiac -----	4
Pulmonary Edema -----	2
Empyema -----	1
Diphtheria -----	3
<hr/>	
Total -----	18

You will note the mortality from intubation twenty three years ago and these recent cases is identical. That the mortality from Tracheotomy is twice as great as that of intubation. You immediately come to the conclusion that intubation is twice as safe as tracheotomy. This is not the fact. There is almost a distinct field of usefulness for each procedure. Tracheotomy is done when our judgment dictates that intubation will not suffice and sometimes we find that having done intubation our judgment was erroneous. As a rule the younger the patient the greater is the indication for tracheotomy.

Modern direct methods permit us to make a much more correct diagnosis and influences us in discriminating between intubation and tracheotomy and causes less trauma.

In past years we seldom saw a case until it was in extremis, had been laboring for days for breath and was exhausted. Today they are brought into the hospital earlier in their illness. Any child who has suffered for several hours with obstructive dyspnoea and the symptoms increasing in severity should be relieved.

When dyspnoea begins a vicious circle is established congestion and edema may be the first

cause and as the child struggles and fights for breath more stasis is established and greater dyspnoea follows. When first seen the child is usually frightened, this also increases the distress. At times oxygen will soothe and quiet the baby and if it can be kept quiet, fed oxygen as required and given cool air it can be watched and perhaps will cough up a chunk of membrane and expel a quantity of thick mucous which will obviate the necessity of interference.

A child with slight dyspnoea if taken into a warm crowded room where the oxygen is diminished will have to pump much harder than if taken out of doors. I have kept them outside and warm in the dead of the winter and tided them over a tight place.

Sedatives must not be given as this reduces the ability of the voluntary muscles of respiration to function.

If you wish to sympathize with these little sufferers just obstruct your breathing to the point where supra and infra sternal and epigastric recession occur on inspiration and you will appreciate their suffering.

INDIRECT INTUBATION

"Hippocrates" mentions the passage of the sounds through the larynx for obstructed respiration, so you see the effort to relieve laryngeal dyspnoea is quite ancient.

Bauchut 1858 produced silver tubes introduced on a sound and attached to a thread for relief of laryngeal obstruction. Numerous changes and improvements were added until O'Dwyer of New York perfected his tubes and technique which have not been surpassed for the indirect method. Not every one who has tried has been able to master this procedure. In order to perform it correctly one must hold the patient in the correct position, must visualize the anatomy of the parts and must cause the tube to traverse the normal deviations of the mouth, pharynx and larynx and must use gentleness personified.

I have seen it done as if by magic and I have seen doctors bloody almost up to their elbows before succeeding in introducing a tube. All forms of trauma must be avoided so far as possible. Numerous sizes and patterns of tubes have been devised for stenotic complica-

tions some being very thin at the neck, some with bulbous end, some with swell in the middle, some cut out behind the head, etc. Great things were accomplished with these tubes but many CHRONIC CASES FOLLOWED. Our impression since the perfection of the technique for tracheotomy and the improvement of tracheotomy tubes is that there are also fewer chronic cases following tracheotomy.

If the patient's condition permits, a general physical examination and history should be procured, A DIRECT INSPECTION OF ITS HYPOPHARYNX AND LARYNX SHOULD BE DONE. This will guide us on our way. The indirect method of inspection is impractical for children.

#### THE DIRECT METHOD MAY REVEAL

1. A negative hypo-pharynx and larynx and lead us to discover an enlarged thymus, atelectasis, pneumonia, emphysema, recurrent paralysis double or single or foreign body. On the other hand we may observe edema of the glottis, purulent accretions, membranous obstructions, abscess in pyriform sinus, retro-pharyngeal abscess, edema of the epiglottis, sub glottic swelling, acute tonsillitis with large pendulous tonsils blocking inspiration papilloma, catarrhal laryngitis with croup, laryngismus stridulous, this is an affection seldom seen and it is generally observed in neurotic children who have rickets. A few drops of chloroform usually suffices but occasionally intubation or tracheotomy has to be performed. The findings lead us to select our procedure. Tracheotomy in itself carries scarcely one per cent mortality, but the occasion for this operation are serious and this is the reason for a high mortality. The causes of death in this sketch will convince you that most of the cases were doomed from the beginning. Some excellent Laryngologists believe that all of these inflammatory membranous cases are Diphtheritic and that the mixed infections are a complication.

Our experience does not sustain this point of view. We are convinced that there are primary streptococcic and other respiratory types of infection. We believe that all of these cases should be treated as Diphtheria and given single doses of Antitoxin after testing them for

allergy. If the laboratory reports show the absence of Diphtheria organisms and the presence of a mixed infection we have not lost anything. The foreign protein will do these cases good.

#### TECHNIQUE OF TRACHEOTOMY

Patient should be flat on table with a slight pad under the shoulders. One assistant at patient's head to elevate the Adams apple. Three lines should be visualized on the neck forming a triangle "Jackson," the base of the triangle on a level with Adams Apple and the apex at the sternal notch. The outside lines of the triangle being near and parallel with the sternomastoid muscle and the center line perpendicular.

The operator tucks his fingers under the patient's chin putting the tissues in the front of the neck on the stretch and with one sweep incises down to the trachea. There is no danger in the midline, there are no important vessels there, occasionally a transverse thyroid vein is cut. If assistants make lateral traction the normal relations are disturbed and disaster may follow. The first ring of the trachea should be identified and the incision should be through the second and third ring, always keeping in the mid line. If there is great dyspnoea and bulging upward of the mediastinal contents it is safer to make the incision from below. Try to have a dry field before incising the trachea but in an emergency incise the trachea and turn the patient on the side. This sounds simple but in an infant dying from an obstructed larynx the venous system is enormously distended, minute veins are dilated and the back pressure causes tremendous bleeding. There is seldom justification to cut the cricoid or the thyroid but it is better for an untrained physician to commit almost any error in order to get air to the patient. Most mistakes can be rectified.

Dr. Ellis Gray once helped me do a tracheotomy on a cabin porch with the baby on an old trunk and only the grandfather to help. Our sponge consisted of a soiled towel. The baby recovered.

Dr. Jackson says a tracheotomy can be done in the dark with a pocket knife.

Do not be alarmed if breathing ceases after opening the trachea, there is often a period of



apnoea. Gently open the incision and wait a reasonable time for breathing to be resumed. Do not insert hooks in the trachea because the ends of the cartilagenous rings may be fractured and dislocated, thus causing future complications.

A cannula should reach well into the trachea, should not impinge on anterior or posterior walls and should have a small air space all around.

Just a word about treatment, do not give sedatives, encourage the cough reflex, the cases which do not cough are the sickest. Force fluids, do not hesitate to keep their little abdomens generously supplied through a needle with N. S. Sol.

Often the intubation or tracheotomy is only the beginning of the trouble. Accumulation of fluid in the trachea requires extubation or bronchoscopic aspiration, this can not be repeated indefinitely and a tracheotomy must follow. At times the patient threatens to drown in their own excretions and aspiration must be done. At times bronchoscopy must be repeatedly performed to remove dried excretions, scabs and plugs of mucous. We did this eight times on an infant and it recovered.

We have found no remedy which effectively prevents the formation of tough bronchial and tracheal excretions. Equal parts of salt and soda in strength of normal salt solution, weak silver solutions, dilute Ephedrine oils have been used with varying success. Food is the main prop in these cases and Glucose Sol. may be used freely intra venously and intra abdominally to tide these babies over a crisis.

Cases in the County given Toxin Antitoxin:

1930	208
1931	220
1932	125
1933	130

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Total.....683

City Cases:

1930	122
1931	122
1932	394
1933	581
1934	5000

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Total.....6219

Diphtheria Cases Reported in the City:

1930	49
1931	40
1932	32
1933	49
1934	21

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Total.....191

County Cases:

1930	5
1931	12
1932	9
1933	6
1934	9

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Total.....41

40 per cent of these cases were adults.

## THE EARLY DIAGNOSIS OF CHRONIC ARTHRITIS

By

OLIN B. CHAMBERLAIN, M.D.,  
Charleston, S. C.

The story of chronic arthritis goes back to the very dawn of history. A study of their fossils demonstrates that the giant reptiles of the cretaceous period suffered from it. The skeletal remains of the earliest races of man show evidences of the disease. A wealth of material exists concerning the prevalence of arthritis among the Egyptians of the time of the Pharaohs. Baths for the treatment of the rheumatoid disabilities have been in continuous existence in France for two thousand years. Today we have only to look around us to see that arthritis is very demonstrably in our midst.

The tremendously wide field for exploitation of sufferers with arthritis is indicated by the fact that there are more than five hundred patented remedies for arthritis being sold through American drug stores, and in Germany the number is said to go into the thousands.

In spite of the impressive age, major importance, and crippling nature of the disease with attendant suffering and economic loss, it has received scant attention from the scientific world, in comparison with many less important

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Read before the South Carolina Medical Association, Florence, S. C., April 24, 1935, by Dr. F. A. Hoshall in the absence of the author.

disturbances. Until recently interest and investigation in this field have not kept pace with the advance of medicine as a whole. During the past few years, however, interest has awakened. This has come largely from a scrutiny of the figures of insurance companies and of health investigations promoted by various governments. In Berlin more persons are invalidated from rheumatoid diseases than from tuberculosis. The Massachusetts State Department of Health reported that in 1929, out of a total state population of four and one-half hundred thousand sick people, there were ten thousand cases of cancer, twenty-five thousand cases of tuberculosis, eighty-five thousand cases of heart disease and one hundred and fifty thousand cases of acute and chronic rheumatism. By comparison then, in a New England state, there were considerably more cases of disability from rheumatoid diseases than from heart disease, tuberculosis and cancer combined. One need not pile up statistics to further emphasize the importance of the problem of arthritis. Most of this appalling disability with its tremendous economic loss and expenditure could be reduced by early diagnosis and prompt treatment. Arthritis is often so insidious in onset that the sufferer does not give up work and really undertake treatment until the favorable state for stopping or ameliorating the disease has passed.

At present, there is an awakening interest to the problem and a widespread development of attack against it. Arthritis is now being recognized as one of a great triad of human plagues, of which the other two are syphilis and tuberculosis. In most of the leading countries important committees have been formed for the study, prevention and treatment of the disease. In 1928 the American Committee for the Control of Rheumatism was formed. Since 1930, this Committee has held an exhibit yearly at the meeting of the American Medical Association and distributed literature dealing with diagnosis and treatment. The Committee has formed the following concept of the problem:

"1. The disease chronic arthritis, prevalent in all temperate zones, represents one of the most important, if not the most important, of existing social and industrial handicaps.

2. The Committee conceives of the disease as

a generalized disease with joint manifestations. Certain prodromes may be recognized and it is of vital importance that they be recognized.

3. It is the opinion of the Committee that at the present time no single infectious agent or any completely defined dietary deficiency or metabolic disturbance has been conclusively shown to be the sole cause of these disorders. The Committee inclines to the belief that any one of these factors, or certain combinations of these factors, under appropriate circumstances, may basically underlie the onset of the disease.

4. The Committee feels it of vital importance that the medical profession have its attention directed to the methods of treatment of proved value which are at present at its disposal. In spite of etiologic uncertainties, the Committee feels that properly managed therapy, which takes into account both infectious and metabolic factors, has yielded results which encourage optimism and impose the obligation of further developing such methods.

5. In the light of the foregoing considerations the Committee purposes to broadcast, as widely as possible, both to the profession and to the public, its concept of the nature of the types of arthritis included under the heading chronic rheumatism, its belief as to the probable predisposing and exciting causes of the disease, and the knowledge which the Committee possesses or may acquire as to the most efficient methods of treatment."

One of the several reasons why arthritis has been an obscure and neglected entity is that its etiology has been much in dispute and its classification confused. Considerable order has lately emerged from this chaos of uncertainty and one can reduce the various sorts of chronic diseases of joints to a simple and understandable list. It would be presumptuous to say that this classification is perfect and that etiology is clear in each case. However, it is reasonably accurate and workable. Excluded from the scope of this paper are the joint affections of:

(1) Acute rheumatic fever.

(2) Specific infections, such as those dependent upon gonococcal, pyogenic, typhoid and dysenteric organisms, those caused by tuberculosis, and syphilis—and those associated with the exanthemata.



(3) Metabolic and hemopoietic diseases—for example, gout, hemophilia, purpura.

(4) Organic nervous diseases — Charcot joints.

(g) Allergic phenomena of joints—Serum sickness.

Excluding these joints affections which are complications of acute disease—or due to known agents, therefore, one can divide the entire remaining group of chronic arthritides in two main types. These two large groups—although generally agreed upon, have received various names. The titles which are most descriptive are proliferative arthritis and degenerative arthritis.

Proliferative arthritis is also commonly called rheumatoid, and chronic infectious, and not so commonly, atrophic arthritis.

The degenerative type is known as senile, and hypertrophic.

It is now in order to examine more closely these two groups with an eye especially to diagnosis and early treatment.

Degenerative arthritis is a disease of the elderly. It is generally conceded today that the main factor in the development of this type is the "wear and tear" of increasing age and repeated trauma. Bacterial agents and focal infections probably play a minor role. It is by no means impossible for an individual suffering from this type of arthritis to contract an infectious sort of joint disease—thus producing a combined picture. In the vast majority of cases degenerative arthritis presents a pathologic picture distinct from the proliferative type. This consists essentially of degenerative changes in the articular cartilages followed by bony overgrowth in the neighborhood of the joints, mainly the larger joints. Arteriosclerosis may be well marked in the region of the affected joints. The earliest symptom is stiffness experienced after rest and disappearing on movement. In such a type of arthritis as this, early diagnosis can accomplish good,—mainly by reducing trauma. Nothing can be done about the advancing age, but suitable preventive measures, changing of occupation, adequate rest, correct posture, orthopedic measures of overcoming flat feet, etc., all may be utilized to slow the progress of the disorder.

It is particularly toward proliferative or rheumatoid arthritis that this paper is directed, however. Proliferative arthritis is, from the standpoint of early diagnosis—and indeed from every angle, the most interesting and important of the various joint diseases. Proliferative arthritis is the most prevalent of the chronic arthropathies. Cecil and Arthur found that in a series of 612 cases of chronic arthritis admitted to the Cornell clinic for study, approximately two-thirds were of the rheumatoid or proliferative type. The average age of onset was 35. It begins in the first half of life, usually, and therefore its victims are converted into comparatively young invalids. This, of course, makes the disease very important from an economic viewpoint. It is progressive and, if unchecked, proceeds to complete invalidism. It is connected, in the minds of most students, in some way, with foci of infection—and therefore, early diagnosis and treatment is imperative. It apparently is a generalized disease with local joint symptoms. It is, therefore, highly important to note carefully the prodromata which precede the typical joint changes. Proliferative arthritis apparently needs a "soil" and a "seed" for its development. The "soil" consists of the constitutional background of the individual. A certain type of body build seems to predispose individuals to proliferative arthritis. These persons are generally tall, slender, flat-chested and enteroptotic. Other predisposing changes in the "soil" include, faulty body mechanics, dysfunction of the digestive tract, excessively and inadequately balanced food intake, pregnancy and prolonged exposure to elements.

The question of the "seed" is obscure. Proliferative arthritis is defined as being "of unknown origin." It is the consensus of opinion of the American Committee for the Control of Rheumatism "that no organism can be consistently isolated from the blood or joint tissues in chronic arthritis." However, practically every student is in agreement on the importance of focal infection in proliferative arthritis. In the first place, in most carefully studied series of cases, 70 to 80 percent of individuals have a definite focus, or give a history of one. Secondly, the clinical course of rheumatoid arthritis

is strongly suggestive of an infectious disease, and the lesions in the joints are essentially inflammatory, and similar to those in other well known infections of the joints. There are many other factors which might be cited in support of this contention—for example—the increased sedimentation rate, and the leucocytosis.

The pathological changes are seen most typically in the phalangeal joints. They are at first limited to swelling in the soft tissues producing a spindle shaped enlargement. The first change in the joint proper consists of a swelling and proliferation of the synovial membrane. The membrane becomes converted into a layer of granulation tissue which extends over the joint cartilage and is known as a pannus. The subchondral layer also becomes inflammatory—and the articular cartilage is destroyed between these granulating areas. After loss of the cartilage, the inflammatory changes lead to partial or complete obliteration of the joint cavity with subsequent fibrous or bony ankylosis. Bony changes, when they do occur, develop later.

Symptoms of proliferative arthritis embrace the early, pre-arthritis prodromata, so important for early and adequate treatment. Vague malaise, a leaky skin, shifting pains from one joint to another, a rapid pulse, early fatigue, especially in a thin ptotic type of individual should arouse the suspicion of proliferative arthritis. There may be paresthesias, such as numbness or tingling of the extremities, burning or itching of the skin, together with coldness and frequently sweating of the hands and feet. The onset may be sudden or gradual. According to McCrae in about one-third of the cases there is sudden onset with fever, headache, malaise, with the swelling of several joints. The spleen may be enlarged and glandular enlargement is often present.

In the majority of cases, however, the onset is gradual and after the prodromata spoken of above, symptoms are usually present in only one joint. Gradually the soft tissue of the joint assumes a fusiform or spindle shape. While remissions and exacerbations are common—the disease slowly but surely assumes a chronic form—and takes on the characteristic features of proliferative arthritis.

Since it is generally agreed that the most important single factor in the treatment of rheumatoid arthritis is the removal of the foci of infection it behooves the clinician to undertake the study of his cases of chronic arthritis as early as possible. It is sheer folly to hope that a well advanced case can be modified by the removal of a primary focus. Had that focus been eliminated months or years before, there is much conservative evidence to indicate that much more would have been accomplished.

Diagnosis is made upon the history, the physical make-up, and the type of joint change. Much aid is secured from the x-ray. At an early stage this shows lessening of joint space. This will be shown in the lantern slides. The other x-ray changes are later—and not of interest in an attempt to appraise early symptoms and signs.

A few laboratory procedures are directly helpful. Of these a moderate anemia, a slight leucocytosis, with shift to the left, and an increased sedimentation rate are the ones which are available to the average practitioner.

Stress may well be laid upon the following summary of facts concerning arthritis.

(1) Chronic arthritis is one of the major social handicaps confronting us today.

(2) Proliferative or rheumatoid arthritis is the most prevalent and important of the crippling diseases of joints.

(3) Proliferative arthritis is a generalized progressive disease with local joint symptoms—occurring in the first half of life.

(4) Rheumatoid arthritis needs a “soil” of faulty constitutional make-up and a “seed,” the exact nature of which is unknown. It is almost universally conceded that focal infection accounts for the entry of the “seed.”

(5) To arrest the progress of this disease early diagnosis is imperative.

(6) Diagnosis can be accomplished by a consideration of the prodromata plus a study of the early joint changes—and certain laboratory procedures.

(7) Early diagnosis, with the removal of foci of infection and the institution of suitable treatment, offers the best method for the curing or checking of an otherwise progressive crippling disorder.



## TUMORS OF THE BRAIN: A BRIEF REVIEW OF THEIR PATHOLOGY\*

By

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In recent years there has been a great advance in the diagnosis and treatment of tumors of the brain. Heretofore, a large proportion of the diseases of the central nervous system were masked and unrecognized. Today, many tumors of the brain are successfully removed, while many others are improved. Clinically, most tumors of the brain may be considered malignant, although many are benign. The complete removal of these benign lesions often results in cure. All growing tumors within the cranium produce serious disability and eventually cause death if they are not treated.

### SYMPTOMS

The symptoms produced by intracranial neoplasms are usually divided into two groups: (1) those which result from increased intracranial pressure, and (2) those which result from a disturbance or destruction of a cerebral center or pathway. The symptoms of increased intracranial pressure are characterized by headaches; occasionally, local tenderness over the neoplasm; vomiting which is projectile in character, and choked disk or what is frequently known as papillo-edema. Nausea does not occur.

Localizing symptoms naturally are varied and numerous, depending on the situation and size of the tumor. Tumors involving the frontal lobe, and particularly the left frontal lobe, of right-handed people, are prone to give rise to changes in personality. Tumors in the chiasmal region produce defects of the visual field. Tumors which arise in the vicinity of the motor cortex produce jacksonian convulsions, while those situated more deeply in the substance of the brain produce monoplegia or hemiplegia. The symptom complex depends on the situation and size of the tumor. Roentgenologic studies, especially pneumoventriculography and encephalography, contribute much information concerning the situation of cerebral neoplasms.

Ocular palsies and other involvement of cranial nerves occur when the lesions involve either the nucleus of the nerve, the nerve pathways, or the nerves themselves.

### CLASSIFICATION OF THE GLIOMAS

The classification in use today, which is not entirely satisfactory, is based on the present scheme of histogenesis. The beginning or anlage of the central nervous system is differentiated early in embryonic life into the medullary epithelium. Three principal cellular types, namely the ependymal epithelium, the spongioblasts and the neuroblasts are derived from the medullary epithelium. It is thought by some investigators that the spongioblasts also may be derived from medulloblasts. The neuroblasts may also be derived from the medulloblasts and the oligodendroblasts are derived from the ependymal epithelium.

The "blastic" form of the cells of these tumors represent the more immature or undifferentiated cells, while the "cytes" represent the more mature and differentiated cells. The spongioblasts (glioma) which make up the largest number of these tumors encountered are divided into four groups. The most malignant is the spongioblastoma multiforme; the next in the order of their malignancy are the polar spongioblastoma, the astroblastoma, and the astrocytoma. Their names more or less indicate the morphology of the particular predominating type of cell. Sometimes, a heterotopic mass of brain tissue is difficult to distinguish from a true tumor.

### PATHOLOGY

The components of the astrocytoma are adult astrocytes, which have undergone some modification. These cells are usually star-shaped; two varieties are described in the literature, the protoplasmic and the fibrillary. Many varieties of cells may occur in different parts of the same tumor. A diffuse type of tumor may occur, which may be intimately mixed with the more or less normal brain tissue; and such a condition may be spoken of as gliosis.

The astroblastoma is about midway between the spongioblastoma and the astrocytoma. This tumor and the more differentiated astrocytoma are usually firm, but cystic degeneration often

\*Submitted for publication April 4, 1936.

occurs; the fluid is straw-colored and if allowed to stand, congeals. Microscopically, the tissue is of a loose texture, and cells surround numerous blood vessels which have thickened walls. In special preparations the cells are seen to have a thick process of varying length, which extends to a blood vessel where it ends in the typical so-called "sucker foot."

The spongioblastoma is firm and seldom undergoes cystic degeneration. This tumor sometimes closely resembles the acoustic neurofibroma, especially the so-called unipolar type. However, on closer examination, hyperchromatic nucleoli and mitotic figures are present in the former, and there is less intercellular reticulum than there is in the latter.

One of the most common tumors, which occurs at all ages, is the spongioblastoma multiforme (gliosarcoma of the older literature). Tumors of this type have been observed to arise from tumors regarded as astrocytomas. Mixed tumors are frequent; this often accounts for variation of symptoms and their duration. These cells of spongioblastoma multiforme are round, ovoidal or irregular in shape; the nucleus and cells are variable, and all transitions occur between such cells and giant cells. These cells of the tumor may be arranged radially about necrotic regions or vascular channels, and endothelial proliferation in the blood vessels may occur. Sometimes there is a syncytial appearance.

There are two types of tumors which arise from the ependymal cell. The first represents the adult ependyma, which retains the adult shape and form of columnar cells, and forms canals or tubules. The second type is less mature and slightly more malignant than the previous type. Both types are essentially slowly growing tumors and the latter type sometimes produces a large amount of colloid or mucoid-like material in the spinal cord which may grossly simulate a perforated colloid carcinoma of the large intestine.

Oligodendrogliomas are composed of oligodendroglia. Masses of these cells are seen, which contain small round hyperchromatic nuclei. These cells may occur singly or may be enclosed in groups by a dense stroma which produces a peculiar fenced-in effect. The tu-

mor frequently contains calcium. Endothelial hyperplasia may be present in the blood vessels. These tumors are rare.

The medulloblastoma is the most common rapidly growing malignant tumor which occurs in the cerebellum of a child. This tumor also may occur in the cerebrum of adults. The typical cell is small, round, oval, or oblong; it has a dense chromatin network and seldom contains mitotic figures. Sometimes the cells are arranged in the form of rosettes. The so-called medulloblast, which is possibly a cell of embryonal type, responds well to roentgenotherapy. Metastasis of medulloblastoma by implants sometimes occurs along the spinal column.

Ganglioneuroma is rare in the brain and is composed of numerous neurocytes of varying size and structure, and many multinuclear cells. Neuroblastomas and neurocytomas are also rare.

In sarcoma, which is also rare, there are few blood vessels, a marked intermingling of large oval and oblong cells, hyperchromatic nuclei and evidence of mitosis. A sarcoma grossly is better outlined than is a rapidly growing spongioblastoma multiforme, from which it must sometimes be distinguished.

The symptoms of a hemangio-endothelioma, or "blood tumor," which are similar to those of a more solid tumor, are caused by the invasion of vital areas and the resultant pressure. This tumor is soft, spongy, vascular, and irregular. Microscopically it is composed of irregular vascular spaces which are lined with endothelial cells of different sizes and activity, depending on the degree of malignancy. The size of the vascular spaces varies; usually the spaces are of the capillary variety.

The more usual tumors which occur in the region of the midbrain are adenomas and adenocarcinomas of the pituitary body and pineal body, and chordoma, which is an embryologic tumor which arises from cells of the notocord, which resemble cartilage cells. In this region, one also finds the remains of Rathke's ectodermal pouch, which occasionally gives rise to cystic tumors. From the hypophyseal stalk or duct arises the epidermoid carcinoma or adamantinoma. A papilloma of the choroid plexus



must sometimes be differentiated from the latter tumors.

The usual pituitary tumor arises from the anterior portion of the pituitary body and is associated with an excess of so-called chromophobe cells. The more usual symptoms are headache, which is usually frontal or supra-orbital; visual disturbances which usually are bitemporal and hemianoptic, and disturbances in sexual development and general physical development, which are associated with hypopituitarism. These tumors are equally distributed among males and females and are usually recognized in adult life. There is nearly always erosion or destruction of the floor of the sella turcica which can be seen in the roentgenogram.

Metastatic carcinoma occasionally occurs in the brain and may produce symptoms and signs similar to those of a primary tumor. The most common metastatic lesions come from the lung, breast and suprarenal glands.

#### TUMORS DERIVED FROM DURA AND NERVE SHEATHS

Nearly all of the benign tumors which involve the nervous system arise from its sheaths. It is a striking characteristic of these encapsulated neoplasms that they cannot invade nerve tissue. On the contrary, tumors that arise within the central nervous system infiltrate nerve tissue but do not break through the meninges; they rarely invade the blood vessels so as to give rise to metastasis.

The common tumors of the nerve sheath are the meningeal endotheliomas (meningiomas) which arise from both spinal and cerebral meninges, and neurofibromas which are found on peripheral nerves and nerve roots.

Meningeal endotheliomas (meningioma) ordinarily grow to a considerable size. The tumor is almost invariably attached to the dura, is rounded, frequently presents knobs, and is covered with a capsule. The tumor is firm and elastic; cysts form rarely in such tumors. Some of these tumors contain many psammoma bodies (psammoma) and in rare instances there may be ossification within the tumor.

Microscopically meningeal endotheliomas are composed of cells that have nuclei which are large, rounded or ovoid and which contain a

dark chromatin network. The cells tend to arrange themselves in columns or groups. Throughout the tumor the cells have a tendency to form layers about various structures. Thus, the cells are frequently gathered together in whorls, which perhaps are the most typical feature of their microscopic appearance. These whorls may be arranged about collagen fibers or about a small vessel. Degeneration not infrequently takes place at the center of these whorls, and psammoma bodies are found in the whorls.

The cells of the more rapidly growing endotheliomas are likely to be arranged in columns, and the amount of whorl formation is small. Mitotic figures are occasionally seen in these tumors.

Meningeal endotheliomas are benign encapsulated tumors which do not metastasize. They do not invade the brain or spinal cord, but are attached to and invade the dura mater and skull.

The neurofibroma is an encapsulated tumor. The capsule is shiny and thin. The tumor is rounded and often presents knobs, which are either hard or cystic. Such tumors do not grow to a large size as a rule. Their color is brownish yellow at operation and those which grow on the acoustic nerve are nearly always yellow, probably because they usually undergo myxomatous degeneration and contain blood pigment. On section, these tumors are likely to contain multiple foci of degeneration, which produces an irregular color. There may be small cysts which have a smooth lining. Colorless gelatinous regions are not found in these tumors, as they so frequently are in genuine neurofibromas. The tumors are usually vascular and are attached to a nerve or nerve root; the fibers of the nerve pass in the capsule about the tumor.

The most easily recognizable feature of the microscopic structure of a neurofibroma is the palisade formation of the nuclei. In addition, they tend to be arranged in linear patterns as though they were passing through the neoplasm. The nuclei are often arranged in large whorls; the appearance of small whorls such as those which are seen in meningeal endotheliomas is rare. The nuclei are likely to be curved or elongated.

These tumors are supposed to arise from the sheaths of nerves or nerve roots. They are be-

nign in that they do not metastasize. They may recur locally unless removal is complete. It often is impossible to remove the tumor completely and preserve the nerve. A meningeal endothelioma is sometimes difficult to distinguish from a neurofibroma.

Intracranial neurofibromas which affect the acoustic nerve are fairly frequent, and more often occur singly. They may be associated with a neurofibromatosis (von Recklinghausen's disease), which is considered as a systemic disease. This is manifested by the appearance of tumors on the peripheral nerves and nerve roots. The condition is considered hereditary. The nerve to which the tumor is attached may be seen to enter at one side and leave the tumor at the other, as a fusiform swelling. The tumors are covered with a smooth thin capsule and they are, as a rule, easily dislodged from the surrounding tissue. They are firm, but gelatinous degeneration may occur.

Microscopically, they vary greatly. There may be tangled reticular areas in which the nuclei are not arranged in any particular order, with an abundance of connective tissue. Nerve fibers may occur singly or in bundles, and are wavy. The presence of nerve fibers within the tumor may be considered pathognomonic of genuine neurofibromas, as such fibers cannot easily be demonstrated in the neurofibromas which arise from nerve sheaths.

#### DIFFERENTIAL DIAGNOSIS

Inflammatory lesions, particularly abscess, syphilis and tuberculosis must be distinguished

from a tumor of the brain. Concomitant lesions should always be considered. Intracranial pressure which is the result of syphilis (gumma) usually subsides when effective therapy is employed. Tuberculosis in the form of a tuberculoma is usually multiple and secondary to pulmonary infection. Blastomycosis, when systemic, may produce an abscess of the brain.

Tumors of the brain may occur at almost any age and may affect either sex. The slowly growing tumors may be present for a long period and may grow to considerable size before they are recognized clinically.

The benign tumors, such as the neurofibromas and meningiomas, usually occur between the ages of thirty and sixty years. Gliomas affect patients who are between six and sixty-three years of age. Medulloblastomas usually occur before puberty.

A glioma may arise in any lobe of the brain and a meningioma (endothelioma) may arise from any part of the dura.

#### THERAPY

The two principal forms of therapy are operation and irradiation. The two may be used together or either may be employed alone, depending on the pathology. Many inoperable tumors are improved by irradiation or decompression, which relieve symptoms and prolong life. Operation offers a fair chance for remission of symptoms over a period of years, and in some cases this results in almost complete cure, depending on the nature, extent, and amount of tumor removed.



# THE JOURNAL

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APRIL, 1936

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COMING MEETING IN GREENVILLE

APRIL 21, 22, 23

The Association was founded in 1848 in Charleston; but while the first meeting was held in Charleston, many have been held in Greenville during the eighty eight years of its existence. The most outstanding was held there in 1905, when the State Society became a part

of the great reorganization plan of the American Medical Association. Since that time the parent organization has grown until it now numbers some one hundred thousand.

The meeting in 1905 authorized the publication of the Journal. The first issues were printed in Charleston, and at different times for a few years the Journal was published in Columbia, Anderson, Seneca, and possibly elsewhere. For about twenty years of the life of the Journal the printing and mailing has been done in Greenville by one firm or its immediate successors. We wish to call attention to the high class work and keen interest manifested by our printers over such a long period of time. The publication of a medical journal, owing to many technical problems involved, calls for great skill on the part of everybody concerned with it.

The South Carolina Medical Association has made great strides since the memorable meeting of 1905. Then the membership numbered only two or three hundred, whereas now we have an average of seven or eight hundred.

The program this year has many features to commend it. First of all, it is wide in scope. The general practitioner has been kept in mind by the Scientific Committee and the officers of the Association. The specialist has been kept in mind also. The program has been limited in order that each essayist may have a satisfactory hearing.

As usual we are favored by distinguished guests. Dr. George W. Crile, of Cleveland, will deliver the address on surgery. Dr. Crile is a master surgeon known around the world. Dr. William B. Porter, of Richmond, is well known throughout the country as an internist and professor of medicine in the Medical College of Virginia.

There will be other attractions such as clinics and also ward walks at the Shrine Hospital. The Woman's Auxiliary has an unusually interesting program. The public health workers also have a creditable program. The luncheon of the Medical College Alumni keeps the profession informed about medical education each year. Then there will be the big dinner for all the members of the Association at which Honorable Neville Bennett, Chairman of the Ways

and Means Committee of the House of Representatives, and Dr. George W. Crile will be the principal speakers.

The House of Delegates will meet on Tuesday evening, April 21, at eight o'clock. The problems before the House in some respects may not be as acute as was the case at Florence last year, but they will be of great importance. We have an ever enlarging public health program in South Carolina. Aside from the routine reports of the regular standing committees there are special committees who have spent a year or more studying particular problems committed to them by the Association. One of these is the report of the Committee on Maternal and Infant

Welfare. Other special committees reporting will be the Committee on Cancer, the Committee on Hospital Care, and the Committee on The Workmen's Compensation Law. Another Committee of great interest is that of the Medical College. Then there is the ever present problem of medical economics to be considered.

There are not so many elections as we had at Florence last year, but they are always of great importance, and careful consideration should be given to them.

We wish to express our gratitude to many friends who have contributed to this special Greenville number of the Journal.

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#### YORK COUNTY MEDICAL SOCIETY

"Ladies and Doctors" night as observed here by the members of the York County Medical Society, their wives, and a number of invited guests, constituted one of the most interesting and thoroughly pleasant occasions of the entire Winter social season in York. Every person in attendance appeared to enjoy every detail of the program which was carried out minus the slightest hitch.

The event took place in the McNeel Memorial building of the First Presbyterian church of York, the entire attendance being 70. In addition to the physicians and their wives, Carl H. Hart, Miss Doris Young, Mrs. Minnie Moore, and Dr. and Mrs. Harrison were invited guests. Particularly honored guests of the occasion were the widows of four former distinguished physicians of the county, these being Mrs. W. W. Fennell and Mrs. J. R. Miller of Rock Hill; Mrs. J. D. McDowell and Mrs. W. G. White of York, to all of whom high tribute was paid by those in attendance.

The dinner table was a thing of beauty, being arranged in a doctors' green cross while all the decorations throughout the dining room followed the green and white motif of the medical profession. The elaborate dinner, which was calculated to please the palate of any epicure in existence, was served by the York Legion Auxil-

iary of the American Legion and it left nothing to be desired in this direction.

Music was furnished before and after the supper, both vocal and instrumental by the young lady members of the faculty of the York high school and this constituted one of the outstanding features of the evening and proved to be most enjoyable. The young ladies all acquitted themselves with rare credit.

Carl H. Hart, a former commander of the Meech Stewart post of the American Legion introduced the speakers of the occasion, these being Maj. W. F. Robertson of Greenville, S. C. and Dr. Oren Moore of Charlotte, N. C.

The speakers spoke, for the most part, in light vein, with a considerable amount of wit and humor interspersed at various intervals and they held the closest attention of their hearers throughout the brief period allotted to this portion of the program.

It was the consensus of opinion on the part of all those participating in the gayeties and festivities of the evening that the county medical body has never held a more thoroughly delightful, interesting, and pleasant occasion than "Ladies and Doctors" night proved to be and plans are now being considered for making it an annual event here.

John I. Barron,  
Secretary.



## Greenville County After 150 Years

March 22, 1786, the South Carolina General Assembly passed an Act creating Greenville county out of territory which nine years prior had been wrested from Cherokee Indians by force of arms on the part of the patriot forces.

Twenty-second county of the state in point of age, Greenville ranked first among the 46 counties of South Carolina in point of population at the time of the decennial census of 1930, having a total population of 117,009.

During the decade 1920-'30 Greenville county rose from third to first place among South Carolina counties in number of inhabitants, having a net gain during the period of 28,511 people. This represented an increase of 32.2 percent in population over the preceding census.

Not only was Greenville county's population gain during that decade the greatest of any county, both as to numbers and rate of increase, but the increase accounted for 51.8 percent of the growth of the state of South Carolina during the ten-year period.

The center of the vast cotton textile manufacturing industry of western South Carolina, Greenville county years ago earned the sobriquet of "Textile Center of the South" by reason of its being at the geographical center of the industry which dominates the piedmont section of the states of North Carolina, South Carolina, Georgia, and Alabama.

While the county's thirty-odd textile plants—employing more than 15,000 wage earners, with annual wages in excess of \$10,000,000, and turning out products each year valued at more than \$34,000,000—is in itself highly important, Greenville enjoys a record as a retail and wholesale trading center which places her at the top of counties in South Carolina.

Latest available records of the U. S. Department of Commerce show the following volume of retail trade for each of four leading counties of the state:

Greenville	-----	\$22,467,000
Charleston	-----	18,648,000
Richland	-----	17,065,000
Spartanburg	-----	15,301,000

Figures as to volume of wholesale trade by

counties are even more impressive, these being as follows:

Greenville	-----	\$33,924,000
Charleston	-----	31,935,000
Richland	-----	26,254,000
Spartanburg	-----	13,107,000

Not only is Greenville county supreme among counties of South Carolina in the fields of retail and wholesale trade, but the county occupies an enviable position among counties of North Carolina and Georgia. Of the 307 counties in the two Carolinas and Georgia, the county of Greenville ranks fourth in volume of retail trade and fifth in volume of wholesale trade. Fulton county, Georgia, and Mecklenburg and Guilford counties, North Carolina, alone rank Greenville county in volume of retail trade. In wholesale trade volume, Greenville is ranked only by the four following counties, in the order named: Fulton county, Ga.; Mecklenburg county, N. C.; Chatham county, Ga.; and Guilford county, N. C.

Greenville's commanding position as a trading center is accounted for, in part, by the county's location with reference to the rich and prosperous industrial and agricultural region comprising the western tiers of counties in South Carolina. Within one and one-half hours drive from Greenville by motor car are situated 72 incorporated towns and cities, all connected by hard-surfaced roads. Population of this compact area was, according to the Census of 1930, 581,477. Of this number 71 percent are white people.

Social aspects of the picture are no less appealing than the economic. Greenville county enjoys a delightful year-round climate, its elevation ranging from 1,000 to more than 3,200 feet above sea level. Average annual temperature of 59.1 degrees and average annual precipitation of 53.18 inches, coupled with altitude, makes for comfortable living at all seasons of the year.

For more than a century Greenville has been known as a religious and educational stronghold. Greenville Woman's College, founded more than one hundred years ago, and Furman University, removed to Greenville in 1851, are both

standard A-grade institutions. The combined enrollment of the two colleges is approximately 1,000. The schools are co-related. Greenville's public school system is outstanding among southern school units. The city school system and the system known as the Parker District, the latter comprising, for the most part, industrial areas adjacent to the city, have a combined enrollment in excess of 16,000. Equipment as well as standards of teaching in both systems is of the very highest.

More than 90 churches, representing practically all well-known denominations, are to be found in the city and immediate suburbs of Greenville.

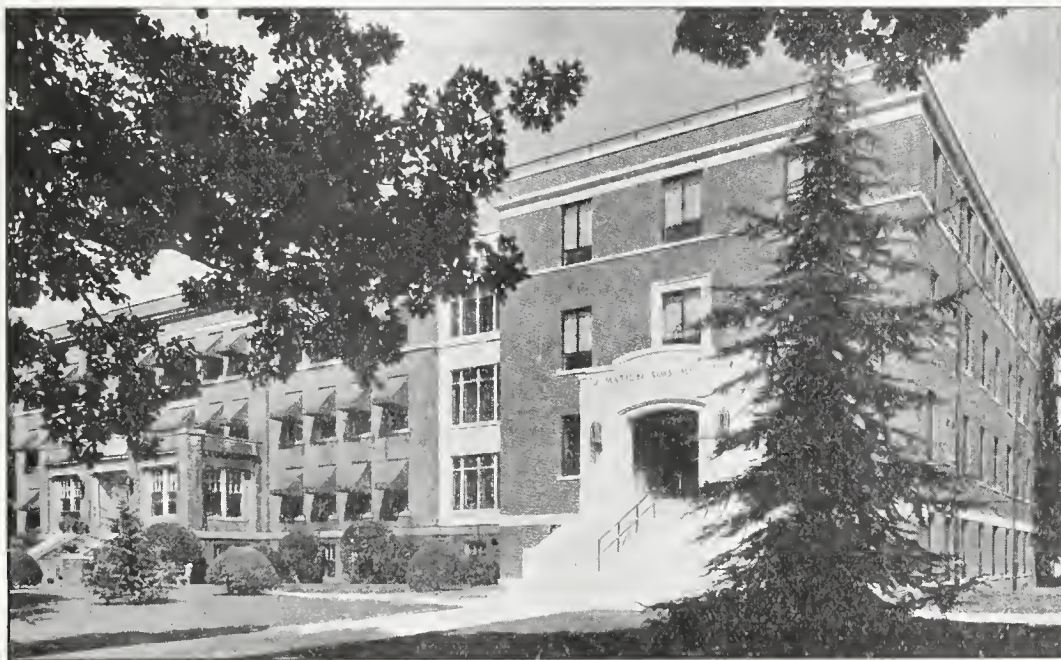
Greenville county's sesqui-centennial anni-

## THE GREENVILLE GENERAL HOSPITAL

The original hospital was organized and the first building constructed in 1894, with funds raised by the Knights of Pythias; this building was not purchased by the City of Greenville until the year 1917. In 1919 the City of Greenville built a fire-proof addition to the old building, which is now the center unit of the present plant.

The present Board of Governors was appointed by City Council in 1930. The Mayor and one other member of council is represented on the hospital board.

The school of nursing was organized in 1912.



GENERAL HOSPITAL

versary finds a community emerging rapidly from the depression. All her industries are operating on full time, the building trades are witnessing activity unlike anything seen since 1929, and retail and wholesale interests report levels are constantly rising. Volume of real estate transactions, both as to sales and amount of money involved, eclipses any year of the depression era.

As Greenville county swings into the one hundred and fifty-first year of her existence as an integral part of the state of South Carolina she entertains high hopes of maintaining her record as a leader in the galaxy of 4 counties of South Carolina.

During that year twelve student nurses were accepted for training; however only three of the twelve graduated. We now average fifty-four student nurses in training per day.

Since 1930 the capacity of the hospital has been increased from 100 to 200 beds. A new private wing named for Dr. J. Marion Sims was completed in 1935. The Duke Endowment contributed \$55,000 toward the total cost of the building, which amount was \$127,000.00.

Our hospital is graded "A" by the American Medical Association and the American College of Surgeons. The training school is meeting all of the requirements of the League of Nursing Education.



We have two residents and five interns on our hospital personnel.

The physical plant and grounds of our hospital have been greatly improved in the last few years. Every department has been enlarged and new equipment added.

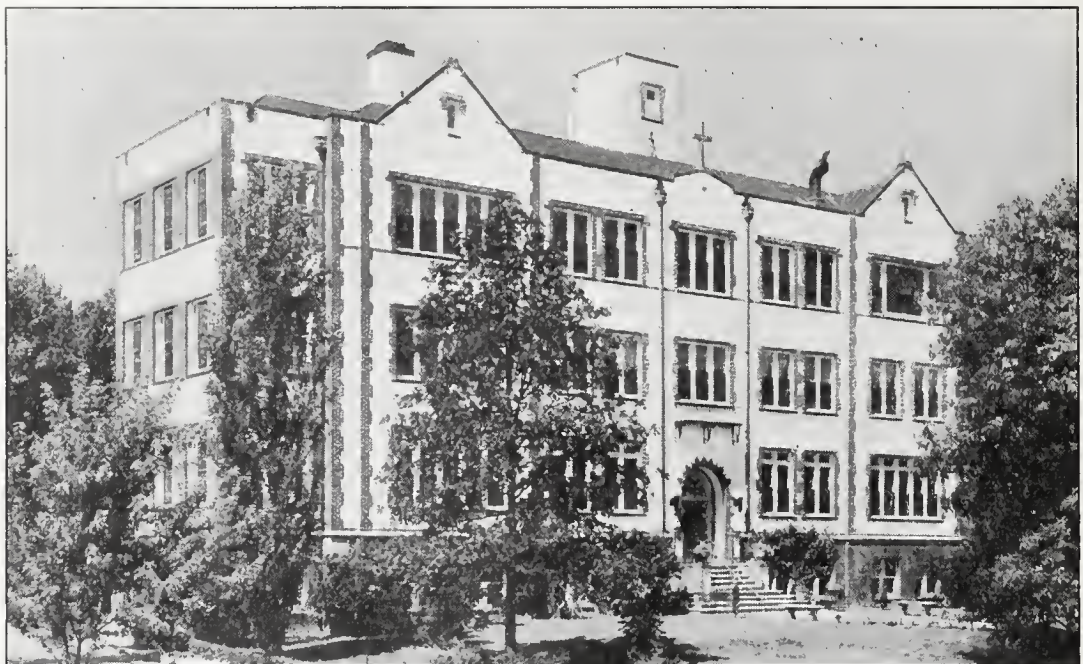
Each year we have made decided improvements in our training school. Our standard for admission of students is higher. Besides a director of nurses, we have two full-time instructors, one who teaches the sciences and one who teaches the practical nursing and does the follow-up work. We have nine graduate nurse supervisors, five of whom have had post-gradu-

## ST. FRANCIS HOSPITAL

Through the efforts of Mr. Thomas F. Parker, a public-spirited citizen of Greenville, and the donations of cotton mills in this area and the Salvation Army, this hospital was built in 1920.

It was originally built for women and children, and contained a home department for unfortunate girls.

About 1924, it was changed to a strictly general hospital, and was known as the Emma Moss Booth Memorial Hospital until its close in October, 1931.



ST. FRANCIS HOSPITAL

ate work in the larger hospitals up east, and two graduate dietitians. Every member of our staff is a member of all the nursing organizations, state and national.

A five year course has been inaugurated with G. W. C. and Furman University for those young women who wish to acquire their B. S. and nursing degrees at the same time.

In our out-patient department we hold the following clinics weekly: Ear, Eye, Nose and Throat, Genito-Urinary, Medicine and Surgery, Orthopedic, Gynecology, Pediatric and Prenatal. Since 1929 the number of clinic visits per year has increased from 8,459 to 23,809 in 1935.

The Sisters of the Poor of St. Francis purchased the building, February 8, 1932. After being thoroughly renovated and remodeled, it was formally opened July 14, 1932, as the St. Francis Hospital. The first patient was admitted July 18, 1932.

After one year, it became necessary to enlarge the hospital, and with the aid of a gift from the Duke Endowment, amounting to 40 per cent of the total cost, construction was begun March 1, 1935, and was completed November 3, 1935. The hospital now has a capacity of 100 beds.

The Duke Foundation has been most liberal in its help to this institution and very compli-



mentary in its praise of the type of work that is being done. The doctors of Greenville have been untiring in their efforts and have given excellent service in helping this institution in its work.

Since the hospital was taken over by the Sisters of the Poor of St. Francis, it has treated 8157 patients, 40 per cent of whom have been charity. This amount of charity work has been made possible only by the dollar per day allowed by Duke Endowment, by the faithful service of the Medical Staff, and by the services of eleven Sisters, gratis.

Dr. J. W. Jervey is Chief Surgeon and has associated with him Dr. J. W. Jervey, Jr. Miss Louise Martin has been surgical assistant for many years, and the hospital is superintended by Mrs. Helen Markwell. Visiting doctors will be welcomed at all times.

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#### THE MATERNITY SHELTER

The Emergency Maternity Shelter of the American Women's Hospitals was an outgrowth and remains a very important part of the infancy and maternity program conducted through



JERVEY HOSPITAL

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#### DR. JERVEY'S PRIVATE HOSPITAL Greenville, S. C.

This institution was organized in 1918 and was moved to its present location at 101 Church Street in 1923. Work is limited to the field of ophthalmology and otolaryngology. Equipment is complete with laboratory facilities, x-ray, and a giant magnet for the extraction from the eye of metallic foreign bodies. Only graduate nurses are employed, at present four being on full time duty, other help being arranged for as needed. The hospital is rated at a capacity of fifteen beds and is arranged to care for any condition arising in diseases of the eye, ear, nose and throat, except that the acute contagious diseases of childhood are not admitted.

the joint sponsorship of the local committee and the American Womens Hospitals. The Maternity Shelter was chartered as a hospital under the laws of South Carolina in January 1934. It had, however, been in existence since 1929. Mrs. J. W. Jervey, one of Greenville's most progressive and beloved women, who has since died, was the President of the local hospital board. Dr. Esther Lovejoy is Chairman of the National Board.

The purpose was and is to provide pre-natal care, safe delivery and post-partum care for normal multiparous, expectant mothers, whose home condition, first, are so destitute as to make delivery there unsafe. Secondly, it offers to those who live far from medical care and aid, a



waiting place as well as efficient and prompt attention. Third, it provides privacy and rest for mothers whose homes are so crowded as to make this utterly impossible. All abnormal cases are sent to the hospitals for delivery.

The Staff consists of Dr. Chas. Wyatt, Medical Director, Dr. Hilla Sheriff in charge of maternal health and well baby clinics, Dr. Lonita Boggs, pediatrician, consultant, Emily Passmore Nesbitt, supervisor American Women's Hospital nursing activities as well as two graduate nurses and three aides.

The Maternity Shelter building is a remodeled home consisting of clinic and delivery rooms, ward and nursery, shower and kitchen. Our usual capacity is eight mothers and eight babies. This can be enlarged if necessary. The equipment is simple but adequate. All goods are sterilized at hospitals and supplies are sold by them to the Shelter at cost. Parker District Board of Educators owns the building which together with lights, coal and water are given without cost. Parker cafeteria supplies the noon day meal at a minimum charge. Milk is given by a local dairy. The laundry is done at a low rate. The cost of operation is kept reasonably low.

The patients are referred to the clinics by family doctors, welfare agencies, hospitals and ex-patients. All are so called charity families. This, of course, applies only to the patients in The Shelter for delivery and care and not to the entire program which is primarily one of health and education.

The financial responsibility was originally assumed entirely by the American Women's Hospitals but it has gradually been shared by many local groups under the leadership of the Emergency Maternity Shelter Hospital Board, The Community Chest, the County, the Duke Endowment, The American Legion Auxiliary, St. Pauls Methodist Church Circle No. 1, The Christ Church Guild, Parker School District, The Junior Charities and individuals who are interested in helping to make motherhood safer are now assisting the American Women's Hospitals which is the medical service committee of the Medical Women's National Association. The American Women's Hospital is entirely responsible for the major salaries of the personnel of both the Shelter and the allied health services.

These services include pre-natal classes and clinics, well-baby clinics, medical and nursing care for the sick infants, maternal health clinics, adult health classes and demonstrations. Through cooperation and coordination assistance is provided in rehabilitating the homes as well as families.

Therefore, though The Maternity Shelter is a hospital it is part of a program which is manifold and covers completely the maternal and infancy periods of life.

Emily Passmore Nesbitt, R.N.

### SHRINERS' HOSPITAL

The Greenville unit of the Shriners' Hospitals for Crippled Children has been in active operation since its opening, September 1, 1927.

Mr. W. W. Burgiss, a Greenville citizen, gave \$350,000 which was used to build and equip the hospital. The maintenance of the hospital costs \$60,000 a year which has been met so far by the dues of Shriners, the help of the Duke Endowment and voluntary contributions.

Treatment at Shriners' Hospital is absolutely free. Any crippled child who meets certain requirements is eligible:

1. He must be under 14 years of age.
2. Normal mentally.
3. Unable to pay for treatment.
4. Must show promise of cure or considerable improvement.

The hospital is continually filled with 60 happy boys and girls each receiving treatment for some deformity or some bone disease. In spite of plaster casts, braces, and other strange-looking appliances, the children laugh and play and enjoy their hospital experience.

Over 3000 children have been treated at the Shriners' Hospital in Greenville during the past 8 1-2 years. There are 175 on the waiting list—these are being admitted in turn just as fast as beds are available. Applications from other afflicted children continue to come in on an average of one a day.

Visitors are welcome at the Shriners' Hospital every day between the hours of 10 and 11 A. M., and 3 and 4 P. M. The hospital staff is glad of the opportunity to explain the interesting work as it goes on in the hospital and the children greet visitors with smiles of friendliness.



SHRINE HOSPITAL

### A SKETCH REGARDING THE HISTORY OF THE GREENVILLE COUNTY TU- BERCULOSIS SANATORIUM, AND SOME OF THE MOST IMPORTANT FACTS ABOUT IT

Prior to 1930 Greenville County had a small tuberculosis Hospital but, not adequate to care for the tubercular patients of the County. Some interested folk collated plans whereby a New Sanatorium might be built, adequate to care for both White and Negro, Adults and Children. Bonds were floated and money provided for such an Institution.

The Greenville County Delegation at its meeting Dec. 13, 1927, elected Seven Trustees for the New Tuberculosis Sanatorium which was to be built. The Delegation acted pursuant to an Act number 165 approved in April, 1926, These newly elected Trustees were di-

vided into Committees and did some real work in the interest of the Institution.

The plans went forward and a Tract of Land located just off the Spartanburg Road, about five miles from the City of Greenville, on Piney Mountain was selected and bought for the building site.

The building was completed August the First, 1930, which had a bed capacity of 70. A Ward for White Women, with a bed capacity of 19; A Ward for White Men with a bed capacity of 19; A Ward for White Children with a bed capacity of 16, eight for boys and eight for girls; A Negro Ward, consisting of five beds for men, five beds for women and five beds for children.

On August the fourth, 1930, twenty-four patients were brought over from the old Hopewell Hospital, and this was the opening day of the New Sanatorium.



## SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

### “NERVOUS COMPLICATIONS FOLLOWING SPINAL ANESTHESIA”

Spinal anesthesia is a generally used procedure. Its advantages are too well known to need mentioning, so much so that some of the disadvantages are almost completely overshadowed. These latter should not be lost sight of, for only by a thorough knowledge of them can the risk to the patient be properly evaluated. The anesthesia is induced by the injection of a cocain derivative into the subarachnoid space, resulting in a toxic effect upon the neural tissue. Generally the reaction is rapidly reversed and recovery is quick and complete. However, occasionally, under some unknown conditions this is not the case and permanent damage ensues. The result is some form of neurologic disturbance. Seven such cases have been studied by Dr. Samuel Brock, et al, of New York (J. A. M. A. 106:441 (Feb 8) '35). A review of them is instructive.

In this series the following conditions were encountered; two instances of aseptic meningitis, one of polioencephalitis, one of lumbar radiculitis, two of cauda equina neuritis and myelitis, and one of transverse myelitis. In six of the seven cases the neurologic disturbance appeared within three days after the anesthesia. In the two cases of aseptic meningitis the onset

was almost immediate, while at the other extreme there was an interval of three weeks before the appearance of symptoms in the case of lumbar radiculitis. The anesthetic agent was nupercaine in three cases, procaine with strychnine sulphate in two, procaine hydrochloride in one, and in one it was not known. Common to all is that they are cocaine derivatives. Of interest is the fact that in two cases the neurologic disturbance occurred only after a second spinal anesthesia with the same drug.

The meningitis cases made rapid and complete recovery. One case of cauda equina neuritis and one of transverse myelitis died of complications attributable to the neurologic disease. The remaining three cases made great improvement, but residual symptoms remained.

The etiology is discussed, but no satisfactory explanation is available. The important fact stands out that there is no way of foretelling when these untoward results will ensue.

Editorial Note: The foregoing article is not reviewed with the intention of discrediting spinal anesthesia. In certain types of cases its advantages more than compensate for occasional untoward late sequellae; in these it is often a life saving procedure. However in view of the fact that serious neurologic disturbances may follow, it seems advisable to limit its use to those cases in which it is especially indicated.

### EDISTO MEDICAL SOCIETY

The regular meeting of the Edisto Medical Society was held at the Eutaw Hotel Thursday, Jan. 23, 1936, at 2:00 p. m. with the president, Dr. Jas. A. Forte, presiding.

The scientific program consisted of a paper by Dr. Chas. A. Mobley on “Cancer of the Breast.”

The following men were elected to office for the new year:

President—Dr. Lawrence P. Thackston.

Vice-Pres.—Dr. T. M. Stuckey

Sec. & Treas.—Dr. H. M. Eargle

Delegates to the State Convention:

Bamberg County—Dr. T. M. Stuckey.

Calhoun County—Dr. T. M. Symmes.

Orangeburg County—Dr. L. P. Thackston,  
Dr. H. M. Eargle.

Every one present agreed to write at least one of his legislators regarding the financial condition of our medical school.

Present were Drs. Mobley, Truluck, Matthews, Nelson, Bolin, Browning, Black, Lowman, Forte, and Eargle.

H. M. Eargle, M.D.,  
Sec. Edisto Medical Society.

## EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

### LOCAL QUININE THERAPY IN CASES OF INTERSTITIAL KERATITIS AND OLD CORNEAL OPACITIES

*Dr. Elias Selinger*

Arch. of Ophthal., May, 1933, and Jan. 1936

Quinine has been used in the Carolinas for years for its anti-malarial properties, but since 1934 Dr. Selinger has reported benefit from its local use in some forms of ocular disease! Therapeutically the action of quinine is bactericide, astringent and also a protoplasmic poison which penetrates deeply into the tissue when applied locally to the mucous membrane. The corneal opacity is a lymphatic and leukocytic infiltration. Since quinine destroys the leukocytes and lymphocytes, especially in and out of the blood vessels there is an especial benefit from its use in corneal opacities. It causes the absorption of abnormal tissue elements, such as newly formed connective tissue in the cornea.

The use of 2 per cent quinine bisulphate ointment twice a day gave rapid subjective improvement after a few days. The patients were able to keep their eyes open.

That the quinine has an effect on the accumulation of lymphocytes and other abnormal cells in the deep layers of the stroma is seen from the fact that the opacities are observed to change in density, and that some of the older infiltrates disappear entirely in places within a few days, while fresh, less dense infiltrates make their appearance from time to time. The rapid change in the character of the infiltrate can be ascribed only to the action of the quinine on the cellular elements making up the infiltrates.

The use of the ointment should be kept up from six months to a year or longer after all activity has ceased, in order to clear up as much of the resulting opacity as possible.

Many opacities had been present for periods varying from six months to five years and longer, and treatment with the quinine ointment was started only after medication with yellow

mercuric oxide and ethylmorphine hydrochloride powder and subconjunctival injections of sodium iodide failed to improve the visual acuity or decrease the density of the opacities. One is safe in assuming that marked changes occurring within a comparatively short time may be ascribed to medication, particularly if the changes in the opacities were very slight or absent before medication was begun.

Quinine bisulphate may also be used in superficial punctate keratitis, blepharoconjunctivitis, episcleritis, acute and chronic conjunctivitis. In some of the cases in this last group a 1 per cent or a 2 per cent aqueous solution of quinine bisulphate was prescribed two or three times a day in the place of the ointment.

Opacities due to corneal ulcers are also benefited, but with corneal ulcers there must always be a just appreciation of the underlying pathology. I would imagine that opacities due to leukocytic and lymphocytic infiltration will be much benefited but those due to true scar tissue will be much less improved. But a slight improvement in visual acuity or even improvement of the cosmetic appearance makes it desirable to use any form of treatment that seems free from danger.

Administration: An ointment of quinine bisulphate, 2 per cent or 4 per cent used twice daily. Solution of quinine bisulphate 10 per cent used two or three times a week. Hot applications, atropine, and antisyphilitic treatment must also be used.

The following drugs are among the antagonists and incompatibles of quinine and for that reason should not be used while the patients are being treated with quinine: copper, lead, zinc, mercury, and their compounds, ammonia, alkalis, iodides and bromides and their salts, tannic acid and lime water. Among the synergists are iron, arsenic and mineral acids.

Quinine bisulphate ointment has a favorable influence on the course of interstitial keratitis and promotes clearing of old corneal opacities.



## OBSTETRICS AND GYNECOLOGY

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J. D. GUESS, M.D., GREENVILLE, S. C.

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## TRENDS IN OBSTETRICS

Considerable interest is already manifesting itself in the report of the committee on maternal health which will be made at the annual meeting of the State Association in April. The report will deal specifically with the findings in a study of maternal deaths which occurred in South Carolina during the last fiscal year. The committee will have an exhibit depicting graphically its findings. It has been fortunate in securing funds sufficient to have the full report printed. It is hoped that every doctor in the State who does obstetrics will secure a copy of this report and will study it carefully.

Anticipating this report in some measure, it appears timeworthy to consider briefly some of the trends in the practice of obstetrics. There are those who think that little progress is being made in obstetrics, but this is not the case. Like all knowledge, obstetrical knowledge diffuses slowly through the profession, and strange to say its application is at times the result of popular demand rather than the result of professional initiative and leadership.

The greatest progressive step in the practice of obstetrics in the past twenty-five years is probably the recognition of the value of prenatal care. The practice of giving prenatal care to the seemingly healthy pregnant woman began with obstetrical specialists treating well-to-do patients, and was soon extended to free clinic cases under their supervision. Its value was soon demonstrated in a reduction in the incidence of eclamptic toxemia, advanced nephritis, severe anemias and unrecognized pelvic deformities and cephalo-pelvic disproportions.

Beginning as it did in the care of the sick and the very poor, the practice of giving prenatal care has gradually spread to the general practitioner in his treatment of the great middle economic class. There is hardly a general practitioner who does not offer some type of prenatal care to his patients. This is frequently not adequate, however. The cause of its inade-

quacy is at least twofold. Many doctors are not thoroughly sold on its value, and so are unwilling to undertake it without adequate remuneration, while they are just as unwilling to charge their patients an adequate fee for it. On the other hand, many patients do not recognize its value, hence do not demand it and are unwilling to pay for it. Both of these factors are rapidly decreasing. Recent medical graduates have been impressed with the value of the care given pregnant women in the hospitals where they interned, and include similar service in their own cases very much as a matter of course. They find that such service tends to increase their reputation and prestige as well as their income. This in itself is an incentive to older doctors to give similar service. The public generally learns faster by word of mouth than from the printed page, and every woman who receives adequate prenatal care is impressed with it and becomes a focus from which radiates knowledge of its benefits. Doctors who do not give such care are losing patients to those who do.

The next most important recent advance in obstetrical practice has been the extension of hospitalization in both normal and abnormal cases. As in prenatal care, this too began with the well-to-do and the charity classes. It has extended rapidly. More and more obstetrical beds are required. This marked increase in hospitalization should have been expected to reduce sharply the mortality and morbidity of delivery, and particularly that from sepsis. Unfortunately this has not proven to be the case. The explanation which has been frequently advanced is that surgical intervention, under a false sense of security given by a hospital delivery room, is more frequently practiced, and has done harm which has more than equalized the difference in safety between home and hospital deliveries. To this is added the risk of exposure to more virulent organisms in a poorly organized department of a general hospital.

Serving to illustrate how prenatal care ties in with hospitalization to the benefit of expectant mothers and to the satisfaction of their physicians is the status with regard to toxemia of late pregnancy. Prenatal care discovers most of these cases in their incipency. Treatment is begun. If response is not adequate the case is hospitalized, and more intensive treatment is instituted. As a part of this treatment labor may be induced and delivery effected. Rarely does the case reach the convulsive stage, and then in an occasional fulminating type. 'Accouchement force' is no longer done, and cesarean section under general anesthesia has almost gone into discard. As a result the incidence and the mortality from eclampsia has been greatly reduced.

Relief of pain during labor in a manner safe for both mother and child is something greatly demanded by women, and progress is being made in providing it for them. Neither a universal nor a wholly satisfactory method has been evolved.

Finally a great forward step in obstetrical practice which is just getting started is that of prolonged postnatal observation. The need of this has come to be recognized since obstetrics and gynecology have become united in medical schools, in hospitals and in practice. Prior to this the obstetrician did not follow his cases through after delivery and the gynecologist was able to trace them back to the original cause

only in part. Postnatal observation for a period of one year or longer is proving of great value and is being offered and advocated by obstetrical leaders. Simple treatment of minor lacerations and granulations of the cervix after delivery will diminish the incidence of cervical cancer later and will lessen backaches and uncomfortable leukorrheas. Acquired uterine retroversions can usually be cured in the postnatal period by postural exercises and supporting pessaries, and by so doing subinvolutions, menstrual disturbances and sacral backaches are prevented. Renal damage should be followed through and when indicated contraceptive instruction should be given so that dangerous subsequent pregnancies may be avoided, or so that babies may be so spaced as to avoid exhaustion or undue strain. Such a program of observation and treatment can not be finished in six weeks. Even though at the end of that period normal involution and healing promises to occur, examination three months later frequently shows subinvolution, relaxations and erosions, which should be treated.

Not only will South Carolina no longer be ashamed of her maternal mortality, but the general health of its mothers will improve, its infant mortality will decrease and the incidence of cervical cancer will lessen when her physicians fully appreciate the value of these recent trends in obstetrics and incorporate them in their own practices.

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#### COASTAL MEDICAL SOCIETY, AUXILIARY

Mrs. Adolph Ritter was chosen to act as a delegate to the annual state convention of the South Carolina Medical Association and Auxiliary to be held in Greenville in April. Mrs. Carroll Brown of Walterboro was named alternate.

The selection of Mrs. Ritter to represent the Coastal Medical Association Auxiliary occurred

at the regular monthly meeting held at the home of the president, Mrs. Riddick Ackerman, in Walterboro last Thursday. After the discussion of various business matters, Mrs. Ritter presented an instructive paper on communicable diseases. Later, dinner was served at the Lafayette Grill.

At a meeting of the Association held on the same day in Walterboro, papers were read by Dr. Joseph Cannon of Charleston and Dr. Carroll Brown.



## NERVOUS AND MENTAL DISEASES

E. L. HORGER, M.D., STATE HOSPITAL, COLUMBIA, S. C.

### MANIC-DEPRESSIVE PSYCHOSES

The manic-depressive psychoses compose one of the larger groups of mental disorders. According to the United States Bureau of Census for the year 1934, the number of patients in this classification was exceeded by that of only one other group—dementia praecox. At the South Carolina State Hospital, however, first place numerically, among first admissions, goes to the manic-depressives. Of the 3755 patients admitted to this institution during the period from September 1, 1931, through June 30, 1935, 771 were manic-depressive, with 461 dementia praecox.

Manic-depressive psychosis—"the name indicating the principal phases of its manifestation"—consists of the following types: manic, depressive, circular, mixed, and others. Again reviewing South Carolina statistics, we find that in the group of 771 manic-depressives, 464 were of the manic type, 263 of the depressed, and 44 of other types.

The cause of the development of this disorder may be considered from two aspects—first, the predisposing factor, as heredity; second, exciting causes. The latter may include any severe strain or stress acting upon the individual, either physically or mentally, as for example, overwork, fright, disappointment, bereavement, family disturbances, and in some cases physical diseases.

The characteristic symptoms of the manic type are "flights of ideas, psychomotor excitement, and emotional excitement;" of the depressed type, "difficulty in thinking, psychomotor retardation and emotional depression." It is to the depressed type that special attention is directed.

The depression varies in severity. It may be very mild—just a simple retardation, physically and mentally. The patient is slow in his movement, speaks slowly in a low tone of voice—perhaps just a whisper—and often in monosyllables. He sits idly about with folded hands, taking no interest in things. His facial expression may not indicate that he is depressed. If

the condition is more severe, the patient is extremely slow in reacting and in his movements, he sits for hours in some corner, and his speech can scarcely be heard. There is great emotional depression, and facial expression is one of profound sadness. He may have delusions which are usually self-accusatory; for example, he may think he is responsible for the sins and wickedness of the world, that he has committed some unpardonable sin, or that he has some incurable disease. Hallucinations may occur. Physically, the appetite is poor, the tongue coated, and there may be loss of weight and constipation. In some cases the extremities become cyanotic. There is also insomnia.

The condition may progress further, the patient become stuporous, remain in bed, refuse to speak or eat, necessitating forced feeding. There is great retardation. Often the facial expression is one of fear and apprehension. Consciousness is clouded and no information can be obtained at this time. Upon recovery, he relates horrible delusions and hallucinations suffered.

In considering this type of mental disorder it is well to remember that all cases of abnormal depression are potentially suicidal. Other cases of depression will resort to alcoholics or drugs to help them in their dilemma. Later some of these will become alcoholic and drug addicts. Still other cases of depression develop some somatic disease such as pellagra, etc., because the mental state of the patient results in his taking insufficient food or in his inability to metabolize the food. The manic-depressives are also more susceptible to the infectious diseases such as tuberculosis.

Thus, the mind and body are closely related—a fact appreciated by all. So closely related are they that what affects one usually affects the other. It is very essential, therefore, that the general practitioner have a thorough knowledge of mental diseases as well as physical in order to care for and treat properly those who place themselves in his charge. Particularly does this apply to the depressed cases. With

both physical and mental pictures at his command he will be more successful than in preventing some suicides and in warding off the devel-

opment of at least a few alcohol and drug addicts.

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## SOCIETY REPORTS

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### COLUMBIA MEDICAL SOCIETY

#### *Resolutions on the Death of Dr. Harmon*

Thursday afternoon, December twenty-sixth, the sudden death of Doctor Samuel E. Harmon shocked and saddened his many friends and patients in South Carolina. His end came swiftly and apparently without pain soon after ministering to a patient. This swift, silent ending of a useful, active life at its peak of achievement, was in keeping with Dr. Harmon's expressed desire that he might die in harness.

Born on a Saluda Valley farm, August 24, 1871, the son of Frederick and Elvena Seay Harmon. At the age of two, he was unfortunate in losing his mother. Thus, early in life he was thrown to a great extent upon his own resources. This, coupled with the vigorous out door life of the farm, contributed to his rugged physique which served him well until the very end.

Dr. Harmon's early education began in a country school near his home, in the public schools of Columbia and later in Newberry College. After one year at Newberry he entered the University of Tennessee Medical School where he was graduated in 1899. Immediately after graduation he proceeded to New York and post graduate work. This desire to equip himself thoroughly for his life's work sent him to all the large Clinics in this country during the course of his lifetime.

In 1900 Dr. Harmon began the practice of medicine in Columbia, S. C., where he laid the foundation for a career in general surgery that brought to him the love, respect and confidence of an unusually large circle of friends both professional and lay. His sincerity, keen judgment,

his profound sense of duty and his qualities of leadership stimulated his colleagues to honor him many times. He served as President of his County Medical Society, his District Medical Society and for seventeen years on the Council of the South Carolina Medical Association; the latter twelve as Chairman. His last and greatest honor came to him when he was elevated to the Presidency of the South Carolina Medical Association which office he held at the time of his death.

In June 1908, Dr. Harmon was married to Ethel E. Shull of Columbia, S. C. From this union two children were born; Ethel, who died at the age of six months and Samuel Eugene, Jr., who with his mother survive.

Dr. Harmon was many times heard to say, "a good doctor is a blessing to his community—a poor doctor a curse" and knowing Dr. Harmon as the members of this Society knew him, we are assured that in his thirty five years in the active practice of medicine, he earned and richly deserved to be called by us his fellow physicians and surgeons and by his patients; "a good doctor."

Be it resolved that the Columbia Medical Society set aside a page of its minutes as a memorial to our deceased colleague, that a copy of this be printed in our State Medical Association Journal, the local newspapers and that a copy be sent to the family.

F. M. Routh, M.D., Chairman.

Benjamin Rubinowitz, M.D.

Floyd D. Rodgers, M.D.

Adopted by the Columbia Medical Society with a rising vote.

Benj. Rubinowitz, Secretary.



## PEDIATRICS

R. M. POLLITZER, M.D., GREENVILLE, S. C.

### RICKETS

Rickets is a disease which notwithstanding its very full and frequent discussion, is daily being neglected in private practice. Although marked advances in our knowledge concerning it has been made within the past two decades it is by no means a recently discovered malady. For as long ago as 1650 Francis Glisson wrote an excellent description of this entity.

Rickets is of rather slow and insidious onset. In no way is it dramatic or terrifying as scarlet fever or poliomyelitis. But it does quite often bring about deformity, which may be serious as in females, and secondarily it causes great wastage of life.

As a working definition one might say that it is a chronic disease in which the ration and metabolism of calcium and of phosphorus is so deranged that proper bone formation is impossible. Further the muscular and nervous systems are affected. Also there is in many instances a diminished resistance to infection, especially in the respiratory tract. A complete understanding of the pathogenesis is not to be easily had, for many factors are involved. We do know that diet, vitamin D, sunlight and mineral salts, all play a part. It is firmly established that there is a lack of balance of serum calcium and phosphorus. Often the serum phosphorus is only 1-5 of the normal. However the amount of mineral intake is not nearly so important as its utilization. For even with inadequate diet, cod liver oil and sunlight may prevent rickets. These two agencies regulate the metabolism of calcium and phosphorus. However in actual practice rickets often develops where cod liver oil has been given. For not infrequently too little is administered, or it is given for too short a time. Also some oils on the market are not potent. One would think that in a sub-tropical climate rickets would be rare. However throughout more than half of the year most of the sunlight reaches only the clothes, excepting the face and hands. Further, in cities during much of the time, smoke and dust obstruct it.

Too many of us think of rickets merely as bone deformity, and do not keep in mind the early manifestations. This is similar to getting interested in a hemiplegia, but not noticing arterio-sclerosis. Few people in South Carolina are willing to go to the trouble or spend their money to have the baby seen regularly by a doctor, when in their opinion it is not sick. Unless an infant has fever, or a convulsion, an eruption or keeps its parents awake it is generally considered well.

Therefore it happens too often that, at 4 months, or 5 months, early symptoms of rickets occur. As a rule if noticed they are attributed to disturbances in feeding or merely as being incidental to teething. From my own personal observation over a period of quite a number of years in pediatric practice; I would class head-sweating, loss of appetite, restlessness by day and especially during the night as important and early danger signals.

But after 6 months or even before, positive clear cut evidence appears. The bones clinically and radiologically show changes. Those of the skull are soft and feel squashy. The epiphyses, especially of the wrists are distinctly enlarged. The chest presents osteochondral enlargements, and usually is pushed forward showing very distinctly Harrison's grooves on the lateral portions. There is considerable loss of muscle tone and the abdomen protrudes markedly.

By about a year the infant assumes the very characteristic appearance of late rickets, so that in the sitting posture a marked gradual curve of the spine is noted, and the little one seems to be mostly head and abdomen. In fact the prominent square head, by careless observers has been mistaken for hydrocephalus. In addition there is a marked pallor. Many of these youngsters are apparently fat and as a rule they are not underweight. However the tissue turgor is poor and a slight illness causes rapid loss in weight. But even all these abnormalities are frequently not noticed by the parents, and indeed missed by the doctor who has not examined the infant nude.

At 13 or 14 months however when the baby begins to walk, everyone comments on the bowing of the legs or the knock-knees. Or if walking is greatly delayed then perhaps the aid of the doctor is sought. Quite often the orthopedist is the first to whom the baby is brought.

In brief it may be said that if doctors and parents would adopt the simple procedure of routine physical examination of infants throughout the first year, in the vast majority of instances rickets could be prevented, or detected early and cured.

## GASTRO-ENTEROLOGY AND PROCTOLOGY

BY W. T. BROCKMAN, M.D., GREENVILLE, S. C.

### A FEW EXCERPTS FROM 1935 CURRENT LITERATURE

*Report of Clement L. Martin to*

American Proctologic Society,

Atlantic City, N. J.

*Fissure, Papillitis and Pectenosis*

Morgan reports 83 cases which he operated, whose lesions could be explained by the presence of pectenosis and a pecten band. He concludes that pectenotomy is the method of choice and advises against the practice of divulsion in dealing with this condition.

The Philadelphia post-graduate group treated four cases of fissure by injection of Gabriel's A.B.A. solution; it proved painful and unsatisfactory in these few cases. 1 cc quinine and urea hydrochloride injections fared little better in three other cases. Using smaller amounts, others have found them quite satisfactory in subacute small fissure. "Three fissures located in the posterior site were excised, after which the technic as outlined by Buie, namely suturing the anal margin to the external sphincter muscle with catgut, was utilized. All three cases were followed by infection, and in one the sutures sloughed off."

N. D. Smith advises delay in incising the abscess until there is definite fluctuation: "incision is indicated as soon as the abscess points or until there is definite superficial fluctuation." Many may not agree with this view. He states that a common practice, that of inserting gauze strip packing is painful and of doubtful value; on this there will be more general agreement.

Murdock saves as much as possible of the external sphincter where the fistulous tract crosses it. "Several years ago I began saving the con-

tinuity of considerable sphincter muscle at the site of fistulectomy. A slight amount of freeing of the bowel wall above is done. It is then possible to place the sphincter upward and stitch the rectal wall downward over it fixing the sphincter against solid tissue in a somewhat higher but nevertheless good functioning position. The final result is a more normal anal contour without as much notched defect, this is sometimes marked after the usual operation."

This technic is applicable to about 40 per cent of his cases, in the others the usual fistulectomy is performed.

Allen and Haskell used a two-stage fistulectomy in 119 of 226 cases. This is extending a sometimes necessary procedure beyond what most proctologists will regard as its indication.

In detailing the "Progress in Rectal Surgery" Gordon-Watson emphasizes the following—

The mechanics of the operation for fistula in ano remain about the same as they were in the 14th Century as practised by John Anderne. He believes he has evidence to prove that fistula-in-ano arises in ano-rectal glands which probably represent mucous glands of the primitive cloaca which persist in some adults and communicate with the anal canal.

Much progress has been made in treatment of cancer of the rectum and sigmoid in the last 25 years. He mentions the Miles and Lockhart Mummery operations.

He associates rectal adenomata and cancer very closely. He believes that the sequence: hyperplasia, adenoma cancer, is clear cut and established" on the basis of the work of Dukes. As a cancer progresses any associated adenomata seems to be inhibited.

The mortality following colostomy has been



reduced from 60 per cent in 1869-78 (lumbar) to 9 per cent (on a five year average) at present.

He notes that the explanation of vesico-colic-fistula on a basis of diverticulosis was not made until the present century. Rectosigmoidectomy is advocated for prolapse and presacral sympathectomy for megacolon.

Daniels reviews the fundamentals in rectal diagnosis. He requires a simple history covering the matter of tuberculous infection and the use of alcohol. There should be a careful examination including palpation of perianal, anal, and rectal regions, and careful inspection with and without instruments. Every patient should be sigmoidscoped and multiple lesions looked for, especially adenomata and carcinomata. The differential diagnosis of fissure in ano, tuberculous anal ulcer, chancre of anus, and epithelioma of anus is important.

Durst directs attention to the proper use of the proctoscope, noting among other points that digital examination should precede the use of the instrument, that the proctoscope should not be passed without the use of air inflation if possible, that it should not be advanced until the bowel is well seen and the direction of the lumen noted.

Gabriel enumerates the following as the recent advances in the treatment of rectal diseases: low spinal anesthesia, dettol (a new antiseptic), surgical diathermy, sclerosing substances in the treatment of hemorrhoids, and prolapse, anesthetics in oil, recto-sigmoidectomy for prolapse, Frei test in rectal stricture, perineo-abdominal excision for cancer, presacral sympathectomy, intraspinal injection of alcohol for pain, sigmoidscope with proximal light, and diathermy forceps.

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### RIDGE MEDICAL AUXILIARY HOLDS MUSICAL TEA

The Ridge Medical Auxiliary held a Musical Tea for the benefit of the Student Loan Fund, Thursday afternoon, March 25. The tea was held at the home of Dr. and Mrs. W. P. Tim-

merman on Columbia Avenue. Mrs. Timmerman is local chairman of the Student Loan Fund. The entire lower floor of the spacious home was given over to the program. Vases of yellow jasmine, white iris and pink snapdragons artistically arranged added to the attractiveness of the different rooms.

Mesdames W. P. Timmerman, A. L. Balinger, and E. C. Ridgell welcomed the visitors at the doors. Mrs. F. G. Asbill and Mrs. David Garvin directed the guests to chairs. Miss Frances Asbill, blonde, dressed in yellow frilled organdy, and Miss Nellie Catharine Calclough, brunette, wearing blue net, received the silver offering. About a hundred guests were comfortably seated.

The following program was rendered and greatly enjoyed:

Violin-Rondino, Beethoven-Kreisler; Romance—Wienisnki. Miss Charlotte Ellen Corzine; Miss Elma Frances Corzine, Accompanist.

Voice-Caro Nome-Verdi; Dawn-Hinson. Mrs. Edith Jones Unger, Coloratura Soprano;

Miss Julian Shealey, Accompanist.

Piano-Romance-Sibelins; Waltz in D. Flat-Chopin. Mrs. Marie Monckton Jones.

Reading-Silence Please-Gould. Miss Daisy Pearce Towill.

Voice-Inter Nos-Payden; Coming Home—Willeby. Rev. Maxie Collins, Tenor; Mrs. Grace Carson, Accompanist.

Voice—Clouds—Charles; Pastoral—Carey; Springtime of Love—Moskowski. Mrs. Nellie Carter Corzine, Dramatic Soprano; Mrs. M. M. Jones, Accompanist.

Voice—Sextette—Green Cathedral—Hahn. Mrs. Kathleen Counts Barr, Mrs. Katheryn Keller, Miss Anne C. Rose, Mrs. Louise Sorrell Crosson, Mrs. Eunice Whittle Eubanks, Mrs. Navice Setzler Able; Mrs. Eugenia Sygert, Accompanist.

Voice—What is a Song?—Curven; Pale Moon—Logan. Mrs. Lucy Scurry Timmerman; Miss Ruth Hunt, Accompanist.

Voice—Dream of Home—Ardite. Miss Julia Johnston; Mrs. Eugenia Swygert, Accompanist.

Vocal Duet—Oh! That We Two Were Maying—Smith. Miss Julia Johnston, Mezzo-Soprano; Rev. Walter Burne, Baritone.

At the close of the program guests were invited into the dining room. Mesdames Caldwell, Cullum, and A. C. Jones were seated at the dining table (on which was spread an elegant real lace cover) pouring tea. Mesdames St. C. Asbill, H. K. Dickert, and Mach Duncan served in the dining room. Delicious sandwiches, cookies and spiced tea were served. The tea was considered a success in every respect.

Mrs. E. C. Ridgell,  
Publicity Chairman.

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THE SANATORIUM is a private institution with 150 beds, located in the Ginter park suburb on the Richmond-Washington National Automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

THE PLANT consists of fourteen separate buildings, most of which are new, located in the midst of a beautifully shaded 50-acre lawn, surrounded by a 120-acre tract of land. Remoteness from any neighbor assures absolute quietness.

THE LARGE number of detached buildings makes easy, satisfactory and congenial groupings of patients. Separate buildings are provided for men and women. Rooms may be had single or *en suite* with or without private bath. A few cottages are designed for individual patients.

THE BUILDINGS are lighted by electricity, heated by hot water, and are well equipped with baths.

THE SCOPE of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Five physicians reside at the sanatorium and devote their entire attention to the patients. A chartered training school for nurses is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

SYSTEMATIZED out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

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*Illustrated Booklet on Request*

# THE JOURNAL

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### THE RELATIONSHIP OF THE CLINICAL PATHOLOGIST TO THE MEDICAL PROFESSION AT LARGE

By

J. M. FEDER, M.D.

*Pathologist, Anderson County Hospital,  
Anderson, S. C.*

We choose to open this discussion with an interpretation—a definition if you please, wherein we will attempt to define that often ambiguous term,—Clinical Pathologist. Our understanding is: A Physician who supervises, performs and correlates various diagnostic procedures requiring specialized skill and instruments of precision, translating the results into terms of Clinical Medicine.

It will be noted that I use the word translate and I use it advisedly. Were I to say to you that one translates from English to Spanish, then the conclusion would be immediately reached that the latter language was spoken with the same fluence as the former. The same must be of necessity apply when an attempt is made to translate from the terms of the test tube to the terms of the bedside. Happily, the vast majority of the Clinical Pathologists come into their specialty from the ranks of the General Practitioners of Medicine. Hence, no foreign language need be learned and this translation process requires no linguistic metamorphosis.

Closely associated with the Clinical Pathologist is a corps of trained workers, Laboratory Technicians or Medical Technologists, the terminology differing Geographically. These admirable and highly useful people perform all of the technical duties evolving about the Laboratory and report their findings to their

Director. Their own code of ethics, and they have a most rigid one, prohibits any attempt at interpreting results or in any manner crossing the boundary into Diagnostic Medicine. This rule, I am happy to state, is but seldom broken and then usually only under the insistence of some thoughtless member of the Profession, urging them to render an opinion that they are by no manner or means professionally competent to express.

In regard to the History of this specialty, which is not ancient, we find that it is almost as American as the Fourth of July for nowhere, except in our Northern Sister, Canada, do we find an individual analogous to the Clinical Pathologist as we know him. To all of us who have been abroad the "Autopsy Surgeon" of the Old Century is no novelty and the great corps of able Pathologists of the teaching centers of Europe are too well known to require comment; but, the position filled by the Clinical Pathologist in America, especially in the smaller centers, is distinctively unique without parallel on earth. To revert back to interpretations, another of mine and perhaps most apt is,—A General Practitioner who by choice limits his activities to Laboratory and other referred Diagnostic work.

At the turn of the Century, very little headway was being made in teaching the relatively new Science of Bacteriology in American Medical Schools. Mostly gross Pathology was emphasized and it in connection with other subjects, Surgery or Physiology. Step by step progress was made but as a Nation, we were not very Clinical Pathologically minded. Then came the War. Physicians fell under the influence of the Medical Departments of the



Army and Navy, always leaders in Laboratory Medicine. Some of these fledgeling Medical Officers served with Departments of Pathology and were thus trained in the specialty, others were intimately associated with it,—all came under its spell. The War over, they returned home, enthusiastic over this newer Medicine, this Laboratory controlled Medicine and they came to demand a service of this nature from their local institutions, similar to that they had known while in uniform—and the response was not lacking. Then and there the lusty infant, Clinical Pathology, was born. So the cry went out for Laboratories, more Laboratories. Trained personnel to man them was scant; so scant that in 1924-25, the peak was reached, given impetus by the requirement of the American College of Surgeons that all tissue removed at operation be examined by a Pathologist. So depleted was our personnel that only one man was available to fill each five demands made upon our never too well filled ranks.

It is not infrequent that the clinician fails to avail himself fully of the counsel of the Laboratory Specialist through misunderstanding of his capacity or willingness to cooperate in solving the problems confronting the Doctor. Many times, on the other hand, the problem is not placed before the Pathologist in the most assimilable manner and often golden opportunities to obtain his fullest aid are heedlessly passed. Take the subject of biopsies. Were the Pathologist permitted to see the lesion in relationship to other structures before its removal, very frequently a much more intelligent interpretation could be given by him in his report. However, in place of this happy state of affairs, how often is a bloody, nondescript, millimeter sized bit of tissue handed the Laboratory man with a request for a diagnosis and often even a prognosis—minus even the slightest history of the case.

Though we, as Clinical Pathologists, believe in ourselves and our work as much as it is possible for any corps of men to do, and while no question enters our mind concerning the value of the Clinical Laboratory in diagnostic Medicine and as a therapeutic check, none regrets more than we the feeling of infallibility sometimes placed upon the Laboratory report.

May I again remind you that our attitude has, is, and will always be that the Clinical Laboratory is but one of the avenues of approach to the diagnostic problem and, is not, the ultimate end of the diagnostic journey.

More to be regretted, perhaps, is the attitude of many that the often never read pre-operative blood count and urinalysis is the ultima-thule of Laboratory Medicine. Let us assume that this same patient shows a sharp rise of fever a few days post-operative. How can you help us then, inquires the Surgeon. Well, a sudden, marked indicanuria might tell the Pathologist that there is a good possibility of beginning peritonitis. A sudden disappearance of the Chlorides from the urine might well presage beginning Pneumonia and on the other hand, a carefully examined blood film may paint an easier picture in the terms of malarial parasites. In tropical and sub-tropical countries, this alarming but relatively harmless phenomena is frequently experienced when a relatively latent malaria is inactivated by a perhaps mild surgical procedure. Again, another little thought of fact is the use of the Friedman test in the differentiation of Teratoma of the testicle from other tumors of that region. Yes,—we sometimes find a positive Friedman test in the male and when this tumor is removed, the test becomes negative. If it does not, look out for metastasis. These few simple illustrations are given to merely demonstrate several of the many, not commonly known ways in which your Laboratory can serve you towards a solution of your own problems, let your field of practice be what it may. In these things your Pathologist stands ready always to bring to bear all of the equipment at his command, to aid and cooperate, in harmony and understanding with you, as individuals and collectively, in any and all of your professional undertakings.

So the future of medicine lies in the trinity, Surgeon, Internist, Pathologist, symbolic of all physicians, working hand in hand, with mutual respect and understanding, each for the problems of the other. Failing in this, we overlook the greatest reward of work well done,—and of yet greater importance, the patient's welfare.

## PRESIDENT'S ADDRESS

By

ROBERT C. BRUCE, M.D.,  
Greenville, S. C.

In taking up the duties as president of the South Carolina Medical Association early this year, it was my sincere wish to develop Dr. Harmon's plans and ideas as best I could, but it has been most difficult. Many of his plans were of such a nature that his interpretation could be the only correct one, others which have changed in their vital aspects from day to day. The entire socio-economic scene is moving with such rapidity that the problem of yesterday has, in many cases, become the last and shallowest mark on the problem of today. I am satisfied, though, that Dr. Harmon recognized this contingency and went below the surface to evaluate the fundamental issues the association has to meet.

As with all people, the involved principles of our economic security are of paramount importance. The problem of the individual doctor who is without private means, struggling with a sort of desperate defeat to obtain a decent living, undermines the very integrity of our work. It produces our dope peddlers, our criminal abortionists, our fee splitters, and a tremendous deterioration in the doctor's ability to function as a physician. The reason is there, but in many cases the responsibility is ours. Professional skill has become a marketable product and can be bought—and sold—at bargain prices on a commodity basis. There are times when it is peddled out in broken doses; other times when it is sold in doses of heroic proportions. There are many instances where commissions are paid to individuals who secure trade. Yet perhaps worst of all is the underbidding that presents us with the doctor who cuts the throat of his colleague for a price—all of which is founded on the chicanery of a commercial racket. It is useless to pretend that the medical profession can survive on these resemblances to commodity distribution, useless to pretend that the individual doctor or the profession can be anything more than the fearful result of such practices.

Yet the doctors who have developed these vicious attitudes toward medical ethics have strong support. The lay economists agree with the ideas and have consigned ethics to the waste basket. They insist that medical incomes should follow, like commodity prices, "a law of wages." But what the law of wages may be or how it may be applied to the last individualized service, I do not know. Although I do gather that a doctor may be allowed to measure the extent of his income by calculating the amount he would earn if he were to give up his profession and hire himself out as a wage earner. If such were the case the worst doctor would probably be the best wage earner, the best one a dollar-a-day laborer. As to this particular theory, the Bureau of Medical Economics says, "The assumption . . . is that the price of professional service is fixed . . . in much the same way as that of commodities . . . The relations surrounding medical service have changed little for hundreds of years. They have been the same . . . in all countries, at all times. Practically all theories in connection with production have been developed to explain an industrial system which is less than two centuries old and in which many of the features on which they are based are but little older than people now living. Medical economics seeks to explain relations almost as old as man himself." (1)

Which has the better right to consideration, the economics of commodity production which may be a temporary or definitely unsound phenomenon; or professional relations which have persisted by the very force of its standards throughout the centuries? Personally, I do not think the force of age or tradition is always a test of value. Senile prejudices in favor of ourselves have accumulated and must be eliminated, yet proven values, such as a decent responsibility toward our colleagues, must be adhered to in spite of their age. At all times, the profession's attitude toward the patient has been so completely divorced from commercial practice that it seems impossible that we should now be on the verge of creating a system which is based on the theory of commerce. From the moment he enters the practice of medicine until the moment he dies, the doctor's obligation to his patient admits of no

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Presented before the South Carolina Medical Association, Greenville, S. C., April 22, 1934.



commercial bargaining yet bargaining is the root, trunk, and branch of industry.

Our situation seems to be the perfect paradox. But what to do? Without recourse to chicanery or commercial practice, how shall the doctor's income be established so that he shall be able to obtain a livelihood while he upholds, at the same time, the integrity of his profession? There is certainly no immediate answer and equally certain that we must make some attempt to untangle the problem. Students of medical economics are of the opinion that the county medical society is the unit from which the effort must start. But it is my firm belief that the first step in developing any effective plan begins with the individual doctor. He is the real unit. Any effort which may be of benefit to him or to the profession lies in his hands. His cooperation or non-cooperation, his honesty or dishonesty determines every other man's success or failure. Here history is repeating itself, for once again the life of the profession is dependent on him. But he can have no enmity, no personal axe to grind, no hard and fast rule for or against personal friends, because one inflexible will to dominate has the power to force on other inflexible wills a compromise which will be impossible to modify later on. It is important to remember that every agitation among ourselves weakens the prospect of adjustment. The public reflects, exaggerates, and profits by our personal animosities—and we are not strong enough to survive it.

It's none too pleasant to stand off and examine ourselves closely. Nor is it flattering to examine the attitude of the general public toward the profession. Whatever the geographic distribution, whatever the economic status, or even the cultural background, the laity's understanding of medicine and its ethics is a strange compound of folklore, of sensationalism which they demand and get from the lay press, and downright ignorance. In recognizing such attitudes, though, we cannot absolve ourselves from blame. Far be it from me to say that I know what should be done. I only know that few doctors have the time or means to become educators; that every man's work must be done; that his patients must be

relieved. I know that each one of us prescribes a bromide for poverty and hopelessness and its attendant ills; that we treat instability which comes from the economic fear of illness with medicines; that we can do little for the shiftlessness and irresponsibility which is produced by a heritage of pellagra, hookworm, and malaria. And as to our own economic insecurity, I know that every man aids and abets all in perpetuating the creditor habits of our profession. So the first step in the remedy cannot be effective until it proceeds from the individual doctor toward the group.

Every one of us must consider, quite honestly and in all humility, his particular responsibility to the problem and make it along with his colleague an integral part of the problem of the county medical society. "The county society is the only geographical unit which includes in its membership the physicians who are practicing all forms of medicine and treating persons of all classes in the community." (2) Each man's experience is a part of the experience of all other doctors who belong to his society. In his own locality, each man can discuss, plan, and establish suitable guides without the fear of imposition of foreign regulations which confuse and obstruct so many local problems. If the individual fails, the group fails. If the small group fails, the larger falls with it, and when, and if, that happens, the entire medical profession will have nothing more to look to than the layman's dictatorship. And if we are determined to create inflexible rules instead of flexible guides, we can look to the state and take what it gives us—which we are already doing to a large extent. Are we as individuals, as members of state and county societies going to make our plans and then ask the co-operation of the state; or, are we going to permit the state to make the laws and draft our services?

In answering that question it might be well for us to remember that our services have been more or less drafted by the Compensation Act. It is not my intention to enter into any full discussion of this act nor of the factors which led to its passage but I should like to emphasize the fact that it has come to stay and more of a like character are going to follow.

The committee which Dr. Harmon appointed to meet with the Compensation Commission to assist in establishing a proper basis for a fee bill was the only contact the medical profession had with the direction of a problem that concerns it vitally. This certainly suggests a preface to bigger issues. It brings us to other unwilling admissions about ourselves. Is there a man among us who can afford to advocate publicly the remedying of the abuses he sees when his bread and meat actually depend on the institutions involved? How many of us can take sides against the free clinics which are practicing curative and preventive medicine—even though the personnel is not licensed to practice? Which one will say to the poor who attend the clinics that the burden of his mental pauperization is destroying the race as a whole? Is there a doctor among us who can more than whisper to himself that the activities of Boards of Health in the competitive practice with the doctor are anything more than the Boards compensation for failure in its legitimate and important duties? Every man among us is balanced on a tight rope and knows it.

Perhaps the thought of a strong organization and a desire for developing in it a cohesive, continuous interest in the political aspects of the situation will do much toward enabling the doctor to exercise his inalienable right of free speech, will give him the right to advocate principles which are not popular. The idea of an organization which has political significance and strength may be displeasing to all those who have prided themselves on the fact that medicine is aloof from politics but we have reached a point now where our pride must keep us only from demagoguery. We must recognize that politics has and always will control our destiny. It is significant to note that the bill for the sterilization of mental defectives which the profession has been advocating for years was passed only on the insistence of a group that was politically important—the Federation of Women's Clubs.

There is no man, woman, or child in the state of South Carolina whose effectiveness is not vitally dependent in one way or another on what we can and do give them, and conversely, ours is dependent on them. Our professional

ethics and personal integrity forbid that we give them any but our best, yet, generally speaking, they are reciprocating by providing the means for our death by slow strangulation. However, I am sure that there is no conscious malice in it—nor even a conscious negligence. It is rather that we, as a group, have never made ourselves felt. We are politically unimportant. As a question to emphasize the point I should like to ask: In the event of the death of a prominent member of any organization in the state, let us say the commander of the American Legion, would it be possible that the notice would not be considered of enough general interest to reach the front pages of every newspaper in South Carolina? To go farther afield, would it be possible or even probable that the widow of a general, however unheroic, would receive a government pension of only fifty dollars a month such as Mrs. Goldberger is now receiving? Although it may be rightly pointed out that our ethics forbids the publicity of its affairs, I say that it does not forbid concern with the most ancient and powerful of all ethics—self-preservation. It seems that the time has come when we must enter politics in cooperation,—or competition, if you will—with many another and less justifiable cause. Yet in assuming such a role, we must expect many false steps, and regardless of the sincerity of the majority, we must know beforehand that many members of the profession will always use political power for private machinations. But that is demagoguery, a malignant pathology, with which we can have no commerce.

Certainly we have a legitimate and entirely ethical work to begin on. The medical college is in need of our concerted action. Since it can have no existence without financial aid, its fate is necessarily in the hands of the legislature. But the real responsibility towards its future is ours. It is notable that the Federation of Women's Clubs at its annual meeting in Anderson last week felt the necessity of endorsing a program for the maintenance of the institution as a class A college, notable too that we have not made the assurance of its proper financial support a personal cause. How many of us have kept our legislators informed



and reformed concerning its needs? If we make the business of the institution our business, we have the obvious benefits it can and will give to us. We have in it the answer to the average doctor's urgent need and desire for continuous graduate education. Without too great a strain on our incomes, we could find in it a solution to Dr. Harmon's very strong wish that all doctors should pass periodic examinations in the major subjects of medicine and surgery. But, like the Federation of Women's Clubs, we can dissipate any allusions the public may have that the maintenance of the institution is confined to the narrow calculation of personal advantage to the profession. The institution is an integral part of the state and as such its most important function is the benefit to the state at large.

But the ethics of such a straightforward policy brings us to more dangerous hazards in policies concerning the changing social scheme. Even our worst enemies can hardly deny that organized medicine laid the foundations for many forms of social change. It was at their insistence that the public health service was established; that the care of the needy and indigent, the crippled, the blind, the insane, and the tubercular and maternal welfare was brought to the attention of the state. Now in its over anxiety to do something quickly, the state seems to have forgotten it. Both the law-makers and the laity appear to be wholly ignorant of the fact that many of their proposed changes will work untold hardships on the profession, not only as to our economic situation but in the character of the professional service we will be able to render. Our situation is similar to the inventor who is forced to sell his invention to an individual who has the power to exploit it. In the analysis of the proposed bill sponsored by the Association for Social Security, the Bureau of Medical Economics presents us with an all time record for such vicious practice. If its interpretation is correct—and of that I have no doubt—this bill has a strong resemblance to Hitler's expulsion of the Jews. I should like to present some of the high lights:

The benefits of the voluntary and compulsory plans go to 95 per cent of the total popu-

lation and the farm laborer, along with the medical profession, seems to be the excluded 5 per cent. "The administration is vested in an insurance commission, a majority of whose members may be laymen, and the chief administrative officer, the Commissioner of Health Insurance, need not be a physician. There is an intricate system of subordinate districts and local commissions and councils with officials for district and local supervision, advisory, and administrative and no limit is set on the amounts to be spent on administration.

"The organized medical and dental professions have nowhere any representation, supervision, control, or consideration, and some provisions seem definitely designed to disrupt and destroy such professional associations." (3)

The revised bill gives "the commission power to remove any doctor or dentist, hospital or other person or agency . . . when in its opinion the inclusion of such a person or agency may be prejudicial to the adequate, proper or efficient furnishing of medical benefits." . . . "And its determination arrived at after hearing on notice of all parties affected shall be final on all questions of law." (Sec. 8, par. 8b)

The local medical manager has the power "to manage and pass on the notices and proofs of sickness, injury, and disability; to determine the furnishing of medical benefits; to pass upon and determine complaints with respect to medical benefits; to supervise and examine into service rendered by all persons and agencies furnishing medical benefits." (4)

Then, too, (Sec. 8, par. 3) he "shall in accordance with the rules and procedures established by the commission promptly determine the validity and the amount of such benefits payable and the validity for medical benefits and the kind and extent of such benefits due." (5)

Were the whole not so serious it would be amusing. Can it be possible that a changing social view point has produced such human vanity? Is it possible that the sponsors of this bill think by bestowing on a Civil Service appointee the power of administration, as "a superforeman of the medical profession" they can also bestow the power of preventing, diagnosing, treating, and controlling disease? By

what intuitive, supernatural method is it possible for one man to learn, through a Civil Service examination, all that a doctor would lay down his life to learn? We wonder if the administrators will suddenly and by virtue of a political alliance take precedence over such men as Reed, Noguchi, Goldberger and thousands of other of less fame but patterned in the same mold. It seems that we have come on another manifestation of the age-old delusions of grandeur resulting from the lesions of a new social disease.

In comparison to this proposed act, other insurance schemes seem flawless—even though the necessity of the insurance seems to have been created in the main for protection against those who advocate the insurance. "The advocates of insurance legislation have stated their objectives definitely or by implication as the desire to keep low income classes satisfied. Bismarck stated this purpose frankly. Lloyd George was a little more subtle, but few would deny that it was the rising strength of the Labor Party and its demand for higher wages led him suddenly to advance his proposal for sickness insurance. This attitude is so general that it is common in Europe to refer to sickness and other forms of social insurance as 'revolution insurance.'"(6)

Within the last few years the auxiliary services—hospital, clinics, and laboratories—have steadily demanded that an insurance system be introduced into their own plans for medical service. "It is not necessarily any reflection on these persons to say that since their duties—and functions are . . . connected with financial management of organizations formed on a commercial model, they are naturally prompted to guard these financial interests. It is unfortunate in their concern with the financial side they seem to forget that their fundamental purpose is to provide the best possible conditions for the giving of medical services by the physician to the sick or injured patients."(7)

During the last twenty years we have had an extensive use of some form or other of health insurance. From the first it has been assumed "that medical service obeyed the laws of commodity economics and that it should be bought in the cheapest market and directed by

laymen in the same way that labor power and commodities are bought and utilized in factories."(8) Every day we hear of instances which confirm this attitude. And the doctor is further confirming it with under-bidding and the complete selling out of his colleagues. The advocates point with pride to their accomplishments. They tell us that the "mutual rights of workers and employers and physicians have been safe guarded."(9)

It is not necessary to go into details of the evidence to the contrary nor of those specific cases where the high integrity of the individual doctor employed under the system has kept the insurance from becoming a degrading parody on medical and social ethics.

What can we do about it? Nothing more than by a concerted group action attempt by moral suasion and political strength to restore a professional standard. Also, we can ask ourselves some very pertinent questions. What are the proposed systems and the systems already in existence going to do to you as a doctor? What will be your standards when under the control of a lay commissioner you can give only such service as your "boss" thinks necessary? And most important of all, what of the patient who has insured himself or thinks he has against such treatment?

The very complexities of our relation to politics, government, and public welfare and theirs to us makes it imperative that our organizations become strongly integrated. And that does not mean that they should develop a will to dominate, nor a desire to strangle any other organization or any part of an organization. Our profession's existence is only justifiable when in active pursuit of its aims and ideals. It must feel and understand the reaction of public opinion. It must protect and defend without being at enmity with the public or among ourselves. It must profit by experience, by advice, by adverse criticism, by hostility even, and certainly by the sane facing of the reality of its problems.

And as a last word it might be said that in so far as the future is concerned our association cannot afford to make many mistakes. It cannot leave to the laity the privilege of determining its policies and procedures. In defend-



ing, one man can do little, many can do much. In preventing, we can profit by the French statesman's remark as he went to the guillotine, "Our indifference brought us here."

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#### MEMORIAL ADDRESS DR. SAMUEL E. HARMON

By

F. M. ROUTH, M.D.,  
Columbia, S. C.

On Thursday afternoon, December 26th, 1935, an All Wise Providence removed from our midst Doctor Samuel E. Harmon, President of the South Carolina Medical Association. He passed quietly and painlessly soon after ministering to a patient. This was as he had often expressed the desire that his end would come.

In the Saluda River Valley on a farm now covered by Lake Murray Dr. Harmon was born August 24th., 1871. He was the son of Frederick and Elvena Seay Harmon. At two years of age he had the misfortune to lose his mother and his childhood days were passed at the home of his maternal grandmother in Lexington County. The hardships of the farm in those days probably contributed largely to the development of a rugged physique that enabled him to carry on actively until the end. His early education begun in the country school near his home was continued in the public schools of Columbia. He spent one year at Newberry College and then entered the University of Tennessee Medical College where he was graduated in 1899. Immediately after

graduation he went to New York for post graduate work. One year was thus spent at the New York City Post Graduate Hospital.

In the spring of 1900 he began the practice of medicine in Columbia, S. C., and for twelve years did general practice. During this period of practice and throughout his useful career Dr. Harmon many times visited the larger clinics of this country to better equip himself for honest service to mankind. His greatest desire was to be called a good Doctor, and an unusually large circle of friends, both professional and laymen know how well he succeeded in his life's ambition. In 1912 his work was limited to General Surgery and in this specialty he rendered conspicuous and faithful service to an unusually large clientele. He was Surgeon for the Seaboard Railway in Columbia for about twenty-five years and Senior Local Surgeon for about fifteen years. In 1922 he served as President of the Seaboard Railway Surgeons Association. His capacity for friendship was unlimited and his intimate friends numbered many who were much younger than himself. To these he was counselor, adviser and friend. His friends were real ones because he would not tolerate pretending ones. His brusque manner was often a cloak to cover deep feelings and anguish over his inability to save human life and prevent suffering.

His interest in organized medicine was keen. He was a member of the Columbia Medical Society, the South Carolina Medical Association, the Tri-State Medical Association, the Southern Medical Association, a Fellow of the American Medical Association and a Fellow of the American College of Surgeons. His interest coupled with his honesty, courage, sincerity and qualities of leadership gave him many positions of honor and trust. He served as President of his County Medical Society and his District Medical Society. In 1918 the State Medical Association elected Dr. Harmon councilor from his district and in 1923 he was made Chairman of that body. To this position he rendered constructive and distinguished service which equipped him well for his greatest honor, that of President of his State Medical Association. In 1934 he was

made President-Elect and succeeded to the Presidency upon the death of Dr. William Egleston in March 1935. To this office he gave his best and until the last was conscientiously striving to better medical conditions and working for the interest of both the public and his profession. Aside from his interests in medicine Dr. Harmon was a member of Ebenezer Lutheran Church, the Exchange Club of Columbia, and was active in the Masonic Order being affiliated with Acacia Lodge, Ancient Free Masons, and also with all higher bodies of the York rite, including Columbia Commandery, No. 2 Knights Templar. He was also a member of Omar Temple, Ancient Arabic Order, Nobles of the Mystic Shrine.

In June 1908 Dr. Harmon was married to Miss Ethel M. Shull of Columbia. Of this union two children were born; Ethel, who died at the age of six months, and Samuel Eugene, Jr., who, with his mother, survives.

He left a large clientele of many who were unable to compensate him for his services, but was never heard to murmur or complain of this as being a burden, and was thoroughly satisfied with the gratitude he earned from these patients. Many of them mourn his passing as acutely as his professional friends do.

When Dr. Harmon had a duty to perform he did it promptly. As an example; his presidential address for this meeting had been completed.

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#### TUBERCULOSIS CLINICS

Dr. G. T. Tyler of Greenville, Chairman of the Committee, authorizes preliminary information in regard to the Tuberculosis Clinics to be held this summer for the purpose of post graduate instruction, diagnosis and treatment of Tuberculosis.

The first one will be held at the Greenville County Tuberculosis Sanatorium, June 17, 1936. The Conferences will begin at 10:00 A. M. Lunch will be served.

The program will be in the form of a Round Table discussion of the various problems confronting the general practitioners, diagnosis, treatment and control of tuberculosis. This will include demonstrations of patients, X-ray pictures, and the method of giving and interpreting the tuberculin test.

The purpose of this is to assist the general practitioners, and it is hoped that all present will present their problems.

Dr. P. P. McCain, Superintendent and Medical Director of North Carolina State Sanatorium will be the guest and leader of the discussion.

All physicians of this District are cordially invited to attend, as well as physicians in other parts of the State. An instructive and pleasant day is promised.

Other clinical conferences will be held as follows: Pine Haven Sanatorium, June 17, 1936, conducted by Dr. Atmar Smith of Charleston; State Park, July 8, 1936, conducted by Dr. Ernest Cooper of the South Carolina Sanatorium, State Park.



# THE JOURNAL

OF THE

## South Carolina Medical Association

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MAY, 1936

### GREENVILLE MEETING A MARKED SUCCESS

The eighty eighth annual meeting at Greenville came very near being a record breaker for attendance which numbered around five hundred including the visitors.

The Minutes of the House of Delegates and the President's address appear in this issue.

The practical observation as to the results

from the meeting lead along several by-ways. The reports of the officers showed progress along most lines of endeavor untaken by the Association. There were several notable committee reports. One of these was by the Committee on Maternal Welfare, Dr. R. E. Seibels of Columbia, Chairman. This report covered an investigation of maternal mortality and morbidity extending over a period of many months. It is said to be the fifth of its kind undertaken in the United States and discloses that South Carolina has the unenviable record of having the third highest maternal mortality rate in this country. The report has been printed and was distributed to every member of the House of Delegates. It is not too much to say that this is an epoch making contribution in the history of our State. It is urged that every physician in South Carolina procure a copy and join in the campaign to remove this blot from the fair name of our State.

Several amendments to the Constitution and By-laws were proposed to be acted on a year hence. One of these looks toward an increase in dues by 1938. A survey of the dues in every State in the Union by the Secretary reveals the fact that three fourths of the States have higher dues than South Carolina, our own standing the same as they were eighty eight years ago, namely, five dollars. In this connection President Bruce sounded the key note in his address urging greater activity on the part of the State Medical Association members in interpreting to the public the relationship of modern medicine to a modern public. To do this most states have found it necessary to increase their office personnel in order that more wide spread contacts may be made. One of these channels will be through a Committee on Public Relations, as recommended by President Bruce.

The report of the Secretary showed that there are still some small County Medical Societies not functioning at all. This has been a problem since the re-organization in 1905. The members of the Council have all made strenuous efforts to promote a County Medical Society in every County in the State. The problem needs the concerted action of the entire profession. Never before has there been in fact so many reasons why every eligible

doctor in the United States should be a member of organized medicine. This is just as urgent a matter in the remote sections of the State as in the larger centers for a chain is no stronger than its weakest link. There are still two or three hundred doctors in South Carolina who do not keep in continuous touch with organized medicine by the payment of their dues from year to year. We should have not less than one thousand members out of the total number of physicians numbering some thirteen hundred.

The Woman's Auxiliary had a splendid meeting and they are doing mighty good work. They deserve the cooperation and encouragement of every member of the Association. This organization now helps one or more medical students to secure an education each year. The Woman's Auxiliary is also the only organization we know of in this State working continuously toward the compilation of biographical records of the outstanding physicians of South Carolina. This compilation includes about one hundred at the present time and plans are being made for publication of same in book form. County Medical Societies should turn over to the Auxiliary historical data of this kind.

The Scientific part of the program in Greenville measured up to expectation and held the attendance up to a good average throughout. The distinguished guests, Drs. Crile and Porter added tremendously to the occasion.

The Association banquet with honorable Neville Bennett and Dr. George W. Crile as chief speakers was a great occasion.

The election of officers showed a strong tendency to reelect every one for another term of service. This is a great tribute to the high class of service rendered by these men to the Association. The election of Dr. Julius H. Taylor of Columbia as President-Elect was an honor bestowed upon one whose popularity extends from the mountains to the sea and whose attainments are known far beyond the borders of his native state. Columbia was selected as the next place of meeting.

The success of the Greenville meeting in all of its phases was due to the wise selection of committees on the part of the Greenville

County Medical Society and the concerted action to the one end that nothing should be left undone for the comfort and enjoyment of every one who attended the convention.

The Mayor of the City also very clearly indicated in his welcome address that the entire city was interested in making the doctors and their wives feel at home.

There is a growing educational factor at every meeting now worthy of mention, in the scientific exhibits and the commercial exhibits.

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JULIUS HEYWARD TAYLOR, M. D., PRESIDENT  
ELECT

The elevation of Dr. Taylor to the high office of President Elect strikes a popular chord in the hearts of the medical profession of South Carolina as well as a multitude of other friends throughout the State. Dr. Taylor has shown a continuing interest in the affairs of the State Medical Association from his earliest connection with it. He has been well known as an outstanding historian of the Association. He was a staunch supporter of the idea of erecting a memorial to Marion Sims. Dr. Taylor has contributed many papers of scientific interest at the annual meetings of the Association.

He was born in Columbia, South Carolina, August 8, 1878, the son of Benjamin Walter Taylor, M.D., of Columbia, and Marianna Heyward Taylor (Beaufort, S. C.). He attended the private schools of Columbia and was at the University School in Charlottesville, Virginia 1890 to 1893. He graduated from the Citadel in the class of 1896. He then spent two years at the University of South Carolina, 1896 to 98, as the first special pre-medical student of the institution. In 1901 he graduated from the Medical Department of the University of Virginia. Following his graduation, from 1901 to 1905 he served as interne on the staff of the New York Orthopedic Hospital—New York Lying-in-Hospital—St. Luke's Hospital (pathological and surgical services) New York. Since January 1905 he has been engaged in the practice of general surgery, Columbia, S. C.



He is a member of many scientific organizations, including the American Medical Association, the American College of Surgeons, the Southern Surgical Association (Resigned Dec. 1935), the Columbia Medical Society, and the South Carolina Medical Association. Dr. Taylor is a ripe scholar and by his genial personality will lend a peculiar charm to his duties as President Elect of the Association.

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#### PRESIDENT R. C. BRUCE INSTALLED

At the time of the election of Dr. Bruce of Greenville to be President Elect the Journal carried a sketch of his life and activities. On the death of Dr. S. E. Harmon, December 26, 1935, President of the Association at that time the Council authorized the President Elect to assume the office of President. Dr. Bruce at once took up these duties and endeavored as far as practicable to carry out the plans of the deceased President. At the Greenville meeting, April 21, 1936, Dr. Bruce was formally installed as President of the South Carolina Medical Association and his Presidential address appears elsewhere in this issue. We urge every member of the Association to read this address for it embodies many of the problems the profession is meeting at the present time and will face in the near future. As is brought out in the address these problems are not to be solved by any one individual but by collective action on the part of the entire profession. Our new President has had an enviable all around experience in the practice of medicine as a general practitioner. He has had desirable contacts with public health problems so urgent at the present time. He has given deep study to economic problems and withal is splendidly equipped to be the real head of the profession in South Carolina during his term of office.

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#### NOTES ON THE A. M. A. AT KANSAS CITY

It will take some months to evaluate the results of the meeting of the American Medical Association in 1936. The place of meeting had many admirable features. It was geographically strategic and as a result the attendance approached ten thousand. Climatic conditions were ideal. The new auditorium, one

of the largest and most complete in the United States met every expectation. We of course are always concerned about the relationship of our own constituent State Association to the national body. This year South Carolina was unusually prominent in the proceedings at Kansas City. On account of the serious illness of the President Elect, Dr. J. Tate Mason of Seattle, who could not be present Dr. Kenneth M. Lynch, Vice President of the Association, participated in the opening general meeting and read the address of the President Elect who was installed in absentia. One of the splendid features of the A.M.A. is that of the scientific session held before the general meeting at which many distinguished visitors are presented. Dr. Lynch presided over these meetings also and introduced among others Lord Horder, Physician in Ordinary to King Edward VIII, of England, and Professor Leon Asher of the University of Berne, Switzerland. The delegation from the South Carolina Medical Association was honored by appointments on two very important committees, one, the Reference Committee on Reports of Officers and the other the Press Committee whose function it was to interpret the deliberations of the Executive Session to the newspapers.

Dr. William Weston of Columbia was a delegate for the first time in the House of Delegates representing the Pediatric Section of the American Medical Association. Dr. Weston was chosen to nominate one of the four candidates for President Elect of the American Medical Association. The entire scientific aspects of the meeting were of the highest order. The scientific exhibits have now become of extraordinary importance as an educational factor in world medicine. Here come the latest achievements in medicine and they are presented for the most part by their originators. Many prizes are given for worthwhile contributions. The Gold Medal was awarded to Charles B. Huggins, W. J. Noonan and B. H. Blacksom, Department of Surgery, University of Chicago, Chicago, for original investigation on the distribution of red and yellow bone marrow and the reticuloendothelial system in the bone marrow. Unfortunately the attendance of South Carolina physicians was very small, only about

half a dozen according to the latest reports. The Association will meet at Atlantic City next year and we always have a good attendance

there. More details of the meeting will be given next month.

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## SURGERY

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WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

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### "IODINE IN THE TREATMENT OF THYROID DISEASE"

The well known relationship between iodine deficiency(1) and the development of goiter is no doubt the explanation of the tendency to administer it as a likely remedy in diseases of the thyroid gland. Though iodine deficiency is the most important fact in the causation of thyroid disturbances it does not follow that its administration will be curative. To the contrary, once the disease has developed iodine is of limited benefit, and moreover might be harmful. This being the case, it should not be used indiscriminately.

In connection with thyroid disease the benefit to be obtained from the use of iodine may be summed up briefly. Probably of greatest importance is its value as a preventative. Given in small dosage to pregnant women it protects them during the added strain of pregnancy and also the developing child. For this reason it should be given to children through the age of puberty, as it is during this period that the gland is subject to great physiological strain and is most likely to undergo abnormal hypertrophy. As a preventative it is naturally of greatest value in regions where goiter is endemic. For this purpose two drops of Lugol's solution once a week is the usual dose—one drop for children. Iodine in any other form is likely equally efficacious.

In cases of hyperthyroidism the administration of large doses of iodine induces a partial remission of the disease. It is important to bear in mind that this is only temporary. Also, the first remission is greater than subsequent ones—in other words, the patient's best response to iodine comes on shortly after begin-

ning to take it. As operation will likely be necessary it is advisable to reserve its first administration for this time. This reduces greatly the dangers of the operation and often permits of the completion of the operation in one stage, whereas otherwise this could not be done. Used for this purpose the dosage is much larger—five to ten minims of Lugol's solution three times a day. There is considerable evidence that a much smaller dosage will produce the same results(2).

In cases of slight diffuse enlargement of the thyroid at the time of puberty, the administration of small amounts of iodine will often cause a reduction of the gland to normal size.

In cases of nodular goiter it is well recognized that iodine will not effect a cure. It may cause some reduction in size, which is only misleading. Should there be coexisting hyperthyroidism it is of value as a preoperative measure, as mentioned above.

At times the continuous administration of iodine seems to be harmful(3). Not infrequently it seems to induce a state of hyperthyroidism in cases of nodular goiter and of diffuse colloid enlargement—therefore apparently quiescent. Once the condition of hyperthyroidism supervenes, it is unlikely to subside upon discontinuing the iodine. Thyroidectomy is generally necessary.

In brief iodine should be used as a prophylactic measure and in preparation for operation. Also on some occasions to induce a remission in a severe state of hyperthyroidism, even though operation can not be done at the time. In some cases it is of value as a therapeutic test. Its use otherwise is not only ineffectual but at times harmful.



1. Kimball, O. P.—Prevention of Simple Goiter, Amer. Jour. of Pub. Health 13: 81-87 (Feb. '23).
2. Thompson, W. O., Brailey, Thompson, P. K., —Effective Range of Iodine Dosage in Exophthalmic Goiter (Boston) J.A.M.A. (Dec.) '28—91-22-1719.
3. Hartsack, C. L.—Abuse of Iodine, Especially Iodized Salt, in Prevention of Goiter—Ann Int. Med. 1: 24-27 (Jly '27)

## PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 305 (26580). Jan. 10, 1936.

### *Case of Drs. Cannon and Smith*

Student Wallace (reading):

Negro male, about 30 years of age, farmer, first admitted 12-21-34, discharged 1-16-35, readmitted 5-6-35, died 5-14-35.

Onset of illness in November 1934, with irregular "jumpy" heart action. About a week later he developed a pain in his back, gnawing in character, exaggerated by bending over, by cough and deep breathing. Since onset of pain has been "urinating freely," the urine being reddish in color. No burning on urination, but marked frequency, said to have to urinate every 15-20 minutes, day and night. Has had slight swelling of feet for several months. On examination had a generalized enlargement of all lymph glands, fine crackling rales in the bases of both lungs, very rapid pulse rate with numerous extrasystoles, possibly slight enlargement of heart to left, "rumbling" first sound, tenderness in both flanks and lumbar regions, especially on right. The urine was normal, contained no t. b. Hb. 70. No plas. in thick or thin smears (4 exam.). Blood Kolmer and Kline (and provocative) neg. Sputum (1 exam.) contained no t. b. Mantoux (1-1000) neg. Spinal fluid (1-9-35) total cells 85 per cu. mm., 98 per cent lymphs, 2 per cent polys, sugar "reduction diminished." EKG (1-2-35) "Paroxysmal tachycardia of auricular origin." Biopsy of cervical lymph gland (1-16-35) "Tuberculous Lymph Node." Had a moderate fever throughout this first admission, daily intermissions to normal. X-ray of chest and lumbo-sacral spine: see chart.

On second admission patient stated that abdominal pain had continued, now centered more about umbilicus than in back. Had fever almost every afternoon since discharge. Rarely had a cough, no night sweats, no hemoptysis. Has "lost a good bit of weight." Only occasional palpitation of heart since first discharge, no precordial pain. Burning on urination, with marked frequency.

Exam.: Temp. 102.2, pulse 128, resp. 36, B.P. 105-70. A poorly nourished and developed man. M.M. pale, skin warm and moist. Eyes, ears, nose and mouth normal. "Tonsils enlarged and inflamed." Posterior cervical and inguinal lymph glands enlarged. Chest: Expansion slightly greater in rt. apex than in left. No abnormal dullness or breath sounds. Few coarse rales in rt. base, none elsewhere. Mediastinum not widened. Heart: Apex in 5th interspace 3 1-2 inches to left of mid-line. Heart sounds of good quality, regular in rate and rhythm, quite rapid. No murmurs or rubs. Abdomen: Generalized tenderness, but no other findings.

Lab.: Urine (5-7-35) Sp.Gr. 1.005; alb. 2 plus; sugar, acetone and casts neg.; 6-8 leukocytes per HPF, no blood. Blood (5-7-35) Hb. 40 per cent D; WBC 16,500; RBC 3,880,000; achromia 2 plus; polys 87 per cent (seg. 75 per cent, stab. 10 per cent, juv. 2 per cent), lymphs 10 per cent, monos 3 per cent. Blood Kolmer and Kline neg. Sputum (3 exams) mixed bacteria 2-4 plus, but no t.b. X-ray of chest (5-7-35) See chart.

Course: Temp. continuously elevated for 6 days, although somewhat lower than on admission; some remission in fever, but no par-

ticular pattern. Pulse continuously above temp. curve on chart. Resp. 22-24 for last 3 days. 5-12-35 "Hard, discrete mass size of walnut in L.L.Q. which new developments, except hiccoughs appeared and continued for several days. Died 5-14-35 at 5:28 A. M.

Dr. J. H. Cannon (conducting): Mr. Bethea, will you open the discussion?

Student Bethea: I'd like to say first that my diagnosis is renal tuberculosis, secondary to primary tuberculosis of the lung. To establish this diagnosis: the patient complained of pain in the back, frequency of urination, and his urine was said to be of a dark reddish color. On the second admission, there was again abdominal pain; at this time the tubercular process had probably involved both kidneys. Further to support this tentative diagnosis, we have the afternoon fever and the weight loss. I would have expected that there would have been red blood cells in the urine, but I do not believe that the failure to find them can exclude this diagnosis. The presence of an anemia on the second admission suggests that there might have been some bleeding in the interim.

The chest findings apparently consisted only of rales in the bases of the lungs. There was a generalized lymph gland enlargement on both admissions, and a biopsy from one of these glands showed tuberculosis.

The only other diagnosis that seems to me at all likely is Hodgkin's disease, and I would rule that out on the basis of the biopsy.

Dr. Cannon: How do you explain the spinal fluid?

Student Bethea: The increased total cell count, the lymphocytosis and the lowered sugar content are a text-book picture of the spinal fluid findings in tuberculous meningitis, but there is nothing else on the record to suggest it.

Dr. Cannon: This man's glands were about the size of peas, had a shotty feel, were more or less discrete and were not tender. Is that your idea of tuberculosis of lymph glands?

Student Bethea: No, it is not, but the biopsy showed tuberculosis.

Dr. Cannon: Why do you say that the primary focus was pulmonary?

Student Bethea: I can hardly say that on

the basis of the chest findings, but that is the commonest location for the lesion of initial infection.

Dr. Cannon: Can you explain the tachycardia and the extra-systoles or do you think they were merely a coincidence?

Student Bethea: I can offer no explanation for them. I think their occurrence must have been a coincidence.

Dr. Cannon: Do you believe that he had extensive pulmonary tuberculosis?

Student Bethea: Probably not. His primary lesion must have almost healed. There was no cough and his sputum was continuously negative for tubercle bacilli.

Dr. Cannon: How do you correlate the leucocytosis with the diagnosis of tuberculosis of the kidney?

Student Bethea: Secondary infection of the kidney is the best explanation that I can offer.

Dr. Cannon: What do you think is the likely explanation of the mass in the lower left quadrant of his abdomen?

Student Bethea: That mass may have been enlarged mesenteric lymph glands, or it may have been tuberculous peritonitis; a sensation as of an abdominal mass or masses is not uncommonly gotten in tuberculous peritonitis.

Dr. Cannon: Just one more thing. I note "onset of illness in November 1934 with irregular 'jumpy' heart." Isn't that an unusual mode of onset for tuberculosis?

Student Bethea: Yes, but the rest of the picture is fairly typical for tuberculosis. I cannot suggest an explanation; I think it merely coincidental.

Dr. Cannon: Mr. Freiberg, can you add anything?

Student Freiberg: I don't believe that we can prove tuberculosis of the kidney from the data given here. There was no hematuria, and the only positive urinary finding was on the second admission, when albumin and a few pus cells were found. It may be tuberculosis of the kidney, but I do not believe that the evidence is strong enough to make that diagnosis. Too, the only definite urinary complaint was frequency of urination. The pain in the back might well have been from diaphragmatic pleurisy.



Dr. Cannon: Well, what would be your diagnosis

Student Freiberg: I believe he had a generalized miliary tuberculosis.

Dr. Cannon how do you explain the tachycardia as the symptom that caused him to come into the hospital the first time?

Student Freiberg: I think that was a coincidence, too.

Dr. Cannon: And the spinal fluid?

Student Freiberg: The spinal fluid findings are quite typical of tuberculous meningitis, but nothing else on the record suggests it.

Dr. Cannon: What do you think was the extent of the pulmonary involvement?

Student Freiberg: From the physical findings it would be very difficult to say, as they are relatively indefinite. I would like to see the x-ray.

Dr. Lynch (demonstrating x-rays): This is the first x-ray, taken in December 1934. Dr. Rudisill reports "The lungs are clear, the heart is not enlarged." This other film, taken at the same time, was reported "There is no evidence of pathology in the lumbo-sacral spine or pelvis."

Dr. Cannon: Would either Mr. Bethea or Mr. Freiberg care to change his diagnosis now?

Student Bethea: No, but I would like to see the other x-ray.

Dr. Lynch (demonstrating x-ray): This film, taken May 7, 1935, was reported by Dr. Rudisill, "There is now advanced, disseminated bilateral pulmonary tuberculosis." This film and the previous negative one were about six months apart.

Dr. Cannon: I don't know that there is anything more to be gotten from the record. But it is very interesting that a man should come in, the x-ray of whose chest is clear, but showing a positive diagnosis of tuberculosis from a lymph node biopsy, and that six months later his lungs should be full of tuberculosis. And his symptoms on the first admission had reference to his "jumpy" heart. There is a question whether the pain in the back indicates renal involvement, or is a result of pleurisy or disease of the nerve roots. Another thing of much interest to me is the spinal fluid. Dr. Townsend, would you care to comment on that?

This spinal fluid was drawn on January 9th, a few days before his discharge and showed 85 cells per cu. mm. and 98 per cent lymphocytes.

Dr. Townsend: There isn't much to be said to explain it. It certainly suggest tuberculous meningitis, but his further clinical course does not substantiate it.

Dr. Cannon: Does anyone else care to comment? The electrocardiogram on his first admission showed a rate of 160 per minute, and was interpreted as paroxysmal auricular tachycardia, altho there is possibly some question about this finding.

Dr. Lynch: I will first show what was found, and will then try to trace the course of the disease.

The lesions were typically tuberculosis, but with one very unusual feature: there was a tuberculosis of the myocardium itself.

In the upper part of the right lower lobe of the lung there was an old scar, and beneath this an encapsulated area of caseation, in the region of this small dense shadow shown in both x-rays. This was the primary lesion, and was not large. In addition to this old lesion, there was widespread tuberculosis of both lungs, of the mediastinal lymph glands, a tuberculous pericarditis with fibrous adhesions obliterating the pericardial sac.

As you can see here (demonstrating autopsy specimens), there is a nodular lesion encircling practically the whole of the right auricle, extending from the orifices of the two venae cavae to the tricuspid ring. This nodular mass is quite rigid and thick. Beneath the endocardium, and eroding it in many areas, are large tubercles directly exposed to the circulation.

In addition there is a widespread tuberculosis of the right kidney, of the spleen, pancreas and peritoneum. None of these areas was very old, although all were older than the usual miliary tuberculosis.

It is very difficult to trace out the course of the disease in this case. I believe that he had a primary inhalation tuberculosis of the right lung and mediastinal lymph nodes, and that the tuberculosis of the pericardium devolved at that time from extension from the mediastinal glands. I believe that after adhesions had

formed between the two years of the pericardium, with new vascular and lymphatic channels formed there, the myocardium itself was directly invaded. When he first came in in November complaining of his "jumpy" heart, he undoubtedly had tuberculosis of the heart.

The frequency of urination and the pain in the back came on at about the same time as the heart symptoms. I am inclined to assign these symptoms to a stricture of the right ureter, which was found at autopsy, because the tuberculosis of the kidney appears too uniform and too recent to have been causing symptoms for that length of time. This is not the usual kidney tuberculosis, which shows an extending area of caseation necrosis, with excavation and cavitation. Instead this is a nodular form of tuberculosis, extending thruout the kidney parenchyma, as from a recent blood-borne dissemination which has extended beyond the usual miliary form.

With this myocardial tuberculosis feeding tubercle bacilli into the pulmonary circulation, one can readily understand the widespread, uniform dissemination in the lungs. There is no cavity as one would expect if the whole pulmonary lesion were one of inhalation. Although the nodules as seen on the x-ray (and as noted in the specimen) are larger than the usual miliary form of tuberculosis, still their uniform and widespread scattering thruout both lung fields, and especially the fact that the lesion appeared very rapidly, argue for blood-borne infection. It will also at least partially explain the lack of physical findings, the lack of symptoms, and the absence of tubercle bacilli from the sputum: the interstitial tissue of the lungs was heavily involved, but the bronchi and bronchioles were free. This differentiation is of some practical importance, as an occasional case of blood-borne tuberculosis to the lungs will heal if the primary focus,

from which the bacilli are disseminated, can be eradicated.

Such a degree of widespread tuberculosis is seldom seen, as the opportunity is seldom offered for continued dissemination of bacilli with each cardiac systole.

A thing that I cannot explain is the comparative clearing up of heart symptoms between his two admissions. On his second admission the heart rhythm and rate were good as contrasted to the situation on the first admission. I would fancy that such extensive disease of the right auricle would greatly distort normal impulse formation and transmission.

There are not many cases of tuberculosis of the myocardium on record, and this case is not presented to teach you to diagnose that condition. It is very unlikely that you will ever see another such case. But this case illustrates well the possible modes of extension of the bacilli and the bizarre effects sometimes seen.

Unfortunately, consent to examine the brain was not obtained, so we are unable to clear up that question.

Dr. Cannon: In trying to correlate the clinical cardiac findings with the heart lesion found at autopsy, it is interesting to note that the pathology was largely in the walls of the right auricle, including the inter-auricular septum. Hence the sino-auricular node, where the cardiac impulse is formed, must have been destroyed. Why this resulted in a tachycardia rather than a bradycardia, I do not know; conceivable the lesion could have caused either. And I would have expected the electrocardiogram to have shown much more evidence of disease than it does. The P waves are apparently normal; (altho they cannot be made out in Lead I), and the P-R interval, representing intra-auricular conduction time, is normal.



## MINUTES

### MINUTES OF THE HOUSE OF DELEGATES SOUTH CAROLINA MEDICAL ASSOCIATION

Tuesday, April 21, 1936

The House of Delegates met in the ballroom of the Poinsett Hotel, Greenville, on Tuesday evening, April 21, 1936, and was called to order by the President, Dr. R. C. Bruce, at eight-forty o'clock.

The report of the Credentials Committee was called for, and Dr. George T. Tyler, Chairman, reported 59 members of the House of Delegates registered so far. The President declared a quorum present.

President Bruce spoke as follows:

"Gentlemen, after the death of our President, Dr. Harmon, last December, the Council asked me to assume the office of president. This was following the precedent of two years ago, after the death of Dr. Eggleston. The death of Dr. Harmon, of course, has interfered with the plans, but I have tried to carry on as best I could during the year. I ask for your cordial sympathy and help.

"The affairs of the Association are in good order. The membership has shown some increase during the year. The type of scientific work carried on by the component societies has been of a high order, and we feel that organized medicine is making good progress towards meeting all situations that develop. The condition of our journal during this year has been much improved. The number of scientific articles has been increased, and they have been of a very high standard. The work of Dr. Hines and of his associate, Dr. Waring, I think has been very commendable. The size of the journal has been increased recently and its general appearance very much improved, as you no doubt have observed. The amount of revenue from the advertising has been considerably increased and has been of great help to us.

"The Secretary will present to you a little later tonight a detailed report and compilation of facts from the various state and county societies throughout the South Atlantic States which have been making efforts toward meeting the changed social and economic conditions. This report covers a rather extensive amount of work being done by the state and county societies, which work has necessitated the expenditure of considerable money. In order that we may meet the situation in our own society it appears that it will be necessary or at least advisable that we increase our dues, in order to function as the various state societies throughout the South Atlantic States have been functioning; and it is my opinion that our dues should be increased to \$7.50. I make this recommendation to the House and hope that you will consider the matter and take some action.

"Our Constitution and By-Laws are, in my opinion, inadequate to meet the present changed conditions of operation of our society, and I should like to recommend that a committee be appointed to revise and bring up to date our Constitution and By-laws. I so recommend.

"I should also like to suggest to the House that, in view of the enormous amount of work necessarily coming before the House of Delegates in its one evening session, it appears to me to be advisable that we revert back to our constitutional provision of having a session of the House of Delegates on the afternoon of the first day, finishing up the work of the House at an evening session. I recommend that this be considered and that the House take some action on this matter.

"I also should like to recommend that a committee on public relations be appointed, in order to take charge of that phase of the work dealing with public matters originating from social and legislative causes, and I suggest to the House that we have such a committee.

"Finally, I am appointing this evening, in order to facilitate the work of the House, a Reference Committee to take cognizance of any important resolutions which may come up during the evening, this Committee to report back to the House before adjournment. I appoint, as the members of that Committee, Dr. Thomas H. Pope, of Newberry; Dr. Thomas N. Dulin, Clover; and Dr. D. J. Barton, Anderson."

The report of the Secretary-Treasurer was next called for. Secretary E. A. Hines read the report, which was accepted and filed.

Dr. J. R. Des Portes, of Fort Mill, Chairman of the Board of Councilors, made the following report:

#### *Report of Board of Councilors*

The Council held a meeting this afternoon at which the individual councilors made their reports. These were good, for the most part, but one councilor made the pitiful report that he had received no answer from any county secretary in his district to his letter asking for information as to the activities of the county societies.

This afternoon Mr. Dukes, Chairman of the Industrial Commission of South Carolina appeared before the Council and explained to us several features of the Industrial Compensation Law, especially as regarding fees paid to us. Mr. Dukes is a very pleasant gentleman. He came to us in a spirit of cooperation, to help us if he could. There is, as you know, a place on all reports in industrial-compensation cases for charges for house visits, office calls, etc. Mr. Dukes asks that, when a doctor renders a bill that has to go to the Commission, he

attach a report if the bill appears to be the least bit large. Why? Because, while the men down there want to do the fair thing, they are not mind readers. So, if your bill appears larger than reasonable, please attach an explanation to it, that you had to call in another doctor, that you had to have a nurse, etc.

The Journal has had an unusually good year. The advertising has picked up considerably, and I think the quality of the Journal is picking up.

One of the county-society secretaries in my district said that he had written and sent in a report of the meeting of his society and that it had never come out in the Journal. The Journal happened to come on the same day I got his letter. I looked through it, and there was the report, so I called his attention to it. Necessarily, what you send in to the Journal can not always appear in the next issue. But when you have news of interest, send it in.

The Lexington County Medical Society wishes for some reason to withdraw from the three-county Ridge Medical Society, of which it has been a part for some time. That is before the Council as a legal matter and will be taken up tomorrow afternoon at the meeting of the Council.

The Council met repeatedly this year; we have had more calls for special meetings than in a good many years. Most of the members have attended them and have transacted the business to the best of their ability. One of these meetings was called in order to carry out the instructions of the House of Delegates at Florence last year, to secure an assistant editor for the Journal. We were fortunate enough to secure the services of Dr. J. I. Waring, of Charleston. While I took part in his selection, I wish to say that I think it was a wise choice.

I have here the financial reports of the Secretary and of the Journal and also the report of the auditors who audited the books.

(Dr. Des Portes then read the summaries from the financial reports, stating that they would be published in detail in the Journal.)

I call your attention again to the meeting of the Council tomorrow at five o'clock. If anyone knows of any reason why the Lexington County Medical Society should not be recognized as a county unit, please appear before the Council to state such reason.

One of the things that came out at the meeting of the Council this afternoon was that we had to reprimand one of our officers for not drawing his salary when he had the money in the bank to do it, just in order to make a little better showing for the Association. I want to pay tribute to Dr. E. A. Hines for doing that.

The report of the Board of Medical Examiners, which had been made to the Council at its afternoon meeting, was received as information.

The report of the State Board of Health was read by Dr. F. M. Routh, the Chairman, and was received as information.

Dr. J. H. Cannon, of Charleston, one of the Delegates to the American Medical Association, read the report for the delegation, which was received as information.

The President called for the report of the Committee on Necrology. The Secretary stated that none of the members of the Committee were able to come to the meeting or to submit a report but that he had compiled a list of the physicians who had died in the past year. Secretary Hines then read the names of the deceased physicians while the members of the House stood in respect to their memory.

The report of the Committee on Maternal Welfare was next called for, and Dr. Robert E. Seibels, Chairman, gave a summary of the Committee's printed report. President Bruce extended the thanks of the House to Dr. Seibels and his Committee for their work.

Dr. Hugh Smith, of Greenville, read the report of the Committee on Cancer in the absence of Dr. J. Richard Allison, the Chairman, who was unable to attend the meeting because of illness.

The report of the Committee on Medical College was read by Dr. Robert A. Abell, the Chairman.

#### *New Business*

Dr. C. B. Epps, of Sumter, offered the following resolution and moved its adoption:

"Be it resolved that the President appoint a committee of three members to work out a plan by which the county medical associations will have more voice in the establishment and control of the county boards of health, and that this committee shall report to the South Carolina Medical Association at the 1937 annual meeting."

After a discussion by Dr. James A. Hayne, State Health Officer, the motion for the adoption of the resolution was put to vote and was unanimously carried.

(Dr. Hines, Secretary, presiding at the request of the President.)

Dr. George T. Tyler, Greenville, offered the following two resolutions:

"Inasmuch as there are a number of doctors belonging to the State Association who would gladly be of some service and who could from time to time inject new blood into the organization, but, as things are, due to the fewness of elective places and the tendency mechanically to re-elect each year officers to succeed themselves, they are not called upon to serve,

"Therefore be it resolved that from now on, with the exception of the Secretary, no officer of the State Medical Association, nor any member of any committee or board, shall be eligible to serve more than two successive terms."

"Since, in two successive years, our President has died while in office and the President-Elect has had the unexpired term to fill, as well as his own term,

"Therefore be it resolved that we modify the Constitution by electing, in addition to the President-



Elect, a Vice-President, who shall assume the office of his superior whenever the necessity arises.

(Signed)

George T. Tyler, Jr.

Robert E. Abell

F. H. McLeod

Floyd D. Rodgers."

Secretary Hines as presiding officer, stated that the two resolutions offered by Dr. Tyler, since they involve changing the Constitution and By-laws, will have to lie upon the table until the next annual meeting.

Dr. Tyler then announced the dates and places for holding the State tuberculosis clinics.

Dr. J. H. Cannon, of Charleston, offered the following resolution:

"Resolved that the South Carolina Medical Association adopt an additional by-law creating the office of speaker of the house, such officer to be elected annually, and the duties of such officer to be to preside over the House of Delegates." This resolution was laid upon the table, to be acted upon next year.

Dr. Floyd D. Rodgers, of Columbia, offered a proposed amendment to the Constitution of the South Carolina Medical Association, as follows:

"Article                      Section

"Immediately following the election of officers at the annual meeting of the House of Delegates, an employee to be known as House Parliamentarian shall be elected by the members of the House to serve for one year or at the pleasure of the House. He shall be eligible for re-election. The qualification of the parliamentarian so elected shall be that he hold membership in the South Carolina Medical Association, that he possess a judicial temperament, and that he possess a thorough knowledge of parliamentary procedures. His duties shall be to sit with the President at all regular or special meetings of the House of Delegates and act in a purely advisory capacity to the President on all questions of parliamentary procedure which may arise. He shall have no vote in the House and he shall have no voice in the meetings save to explain any given parliamentary ruling at the request of the President. The President shall not necessarily be bound by any ruling suggested by the parliamentarian, and any such ruling will, of course, always be subject to appeal from the floor, or by appeal requested by the president. The parliamentarian, for his work and for his maintenance of intimate knowledge of rules of procedure, shall be given an annual honorarium of ten dollars out of the treasury of the Association."

(President Bruce resumed the chair.)

#### *Miscellaneous Business*

On motion of Dr. D. L. Smith, amended by Drs. George T. Tyler, James A. Hayne, and Hugh Smith, the Secretary was directed to send telegrams

to Dr. E. F. Parker, Charleston, Dr. R. S. Cathcart, Charleston, Dr. Julius H. Taylor, Columbia, Dr. A. Earle Boozer, Columbia, and Dr. J. R. Allison, Columbia, expressing the regret of the House at their absence.

The President asked for invitations for the 1937 convention. On motion of Dr. C. H. Blake of Greenwood, seconded by Dr. Floyd D. Rodgers of Columbia, the House voted to meet in Columbia next year.

#### *Election of Officers*

The President called for nominations for President-Elect. Dr. F. H. McLeod nominated Dr. Julius H. Taylor, of Columbia. Dr. George R. Wilkinson nominated Dr. W. L. Pressly, of Due West. Dr. D. L. Smith nominated Dr. Francis B. Johnson, of Charleston. The nominations of Dr. Taylor and Dr. Pressly were seconded. Dr. W. P. Timmerman also seconded the nomination of Dr. Taylor. The nomination of Dr. Johnson was seconded. Dr. J. H. McIntosh seconded the nomination of Dr. Taylor, as did Dr. J. W. Jervy and Dr. C. B. Epps. Dr. J. R. Young seconded the nomination of Dr. Pressly. Dr. J. H. Cannon seconded the nomination of Dr. Johnson.

On motion of Dr. William Weston, the nominations were closed. The Secretary stated that the voting strength of the House was 76. A vote by ballot was then taken, resulting in the election of Dr. Julius H. Taylor as President-Elect. On motion of Dr. D. L. Smith, the election was made unanimous.

On motion of Dr. William Weston, the Secretary was instructed to send a telegram to Dr. Taylor informing him of his unanimous election as President-Elect.

Dr. E. A. Hines was unanimously re-elected as Secretary-Treasurer.

The following members of the Board of Councilors were elected to succeed themselves:

Second District—Dr. T. A. Pitts, Columbia.

Fourth District—Dr. Hugh Smith, Greenville.

Sixth District—Dr. Douglas Jennings, Bennettsville.

Eighth District—Dr. G. M. Truluck, Orangeburg.

Dr. A. Earle Boozer, of Columbia, and Dr. E. Marvin Dibble, of Marion, were unanimously elected members of the Board of Medical Examiners to succeed themselves.

*Delegate to the American Medical Association:* Dr. William Weston nominated Dr. J. H. Cannon, of Charleston, to succeed himself. Nomination seconded by Dr. Kenneth M. Lynch. Dr. Cannon was elected.

As Alternate, Dr. Floyd D. Rodgers nominated Dr. O. B. Mayer, of Columbia, and Dr. Mayer was elected.

No further business appearing, the House of Delegates then adjourned *sine die*, at twelve-ten o'clock a. m.

REPORT OF THE SECRETARY-TREASURER  
OF THE SOUTH CAROLINA MEDICAL AS-  
SOCIATION OF THE SOUTH CAROLINA  
MEDICAL ASSOCIATION

DR. E. A. HINES,  
Seneca, South Carolina

It is gratifying to report progress in most of the activities of the Association at the close of the fiscal year, December 31, 1935. The total membership was 715 which was a substantial increase over the preceding year. The finances of the Association and Journal show increases also as will be noted in the report of the Treasurer to be presented by the Chairman of the Council.

The scientific aspects of the Association during the year were highly satisfactory. All of the District meetings and the majority of the County meetings had good programs and an excellent attendance.

In the early part of the year economic problems loomed large on the horizon. These included the putting into effect the new Workmen's Compensation Law and the study of hospital care. The agitation in regard to the threat of state medicine added to the complexity faced by organized medicine all over the country. Toward the latter part of the year many of these menacing problems apparently quieted down but of course they have not been solved.

The experience, however, has stimulated greater efforts in practically every state in the union to build up stronger organizations particularly in the County Unit which is the fundamental unit of organized medicine. Towards this end the small County Society problem continues to challenge the keenest minds as to how they may be made to function in a creditable way. It is not unusual for the State Secretary to receive a letter like this which carries with it an appeal that should be met in some way:

April 16, 1936

To the Secretary S. C. Medical Asso.

Dear doctor:

Since there is no organized medical society in this county I have not been able to obtain a program of the State meeting which is to be held in Greenville on the 21st to 23rd. Will appreciate it if you can send me several printed programs as I am sure some of the other doctors here in the county would like to have programs of the meeting.

Hoping that the State meeting will be successful and that I may have the pleasure of meeting you there, I am,

Sincerely yours,

In the 1934 A. M. A. Directory South Carolina is accredited with 1,329 doctors. If the State Medical Association is to be fully prepared to meet the demands of the next few years there should be at least 1,000 members in active affiliation. The larger counties have covered their possibilities very well so that the increase must come from such counties as the ones from which the above letter comes.

Various plans have been tried in many parts of the country without complete success and this makes the challenge all the more urgent.

During the year the Secretary's office cooperated in meeting another demand which is growing in significance, that is, post graduate medical education. There is no way yet open for more than a few doctors to leave their practices and enjoy the benefits of even short refresher courses in the great medical centers. The only solution is to carry post graduate education to the doctor in the field. During 1935 an admirable gesture was made in bringing Dr. J. R. McCord of Atlanta to South Carolina to inaugurate courses on obstetrics. His visit covered a large part of the State. As a result the Piedmont Post Graduate Clinical Assembly was organized at Anderson in September and the scope of lectures considerably enlarged. There was an attendance of more than 100 doctors and the success of the new venture assured. One of the most far reaching educational factors in medicine in the United States is that of Fellowship in the American Medical Association. There are only three hundred and forty five fellows residing in South Carolina, much less than half of the active practitioners of the State. A fellow of the A. M. A. has the benefit of the Journal of the American Medical Association which as a stimulating factor has no equal anywhere in the world. There are of course many other advantages. Your Secretary attended the annual conference of Secretaries and Editors at the Headquarters Building in Chicago in November and participated in the deliberations there. One particular feature was that of a special program dealing with the details of editing and publishing a state medical journal.

Some State societies have creditable headquarters buildings, and modern equipment but they are few in number. A very good substitute has been available, however, at our own State headquarters. During the year new equipment has been added. A new typewriter, a new mimeograph machine and a new addressograph are now in service. The rooms have been in process of remodeling and a blue print and plans for a larger library completed.

The Journal facilities have been greatly increased and it has enabled the Journal to be published earlier in the month and improved otherwise. The same printing firm has handled the Journal for about twenty years and is located in Greenville. This firm has constructed a new building recently and otherwise modernized their plant. It is one of the largest in the State.

With the extensive revision of the United States Pharmacopoeia Number XI and the revision of the National Formulary Number six just off the press and to become official in June your Secretary believes the time has come for the State Medical Association to take cognizance of the increasing tendency for physicians to prescribe proprietaries and specialties instead of the official preparation. Your Secretary has conducted a limited survey and determined that fifty



five per cent of prescriptions are mainly outside of these two official volumes. Other surveys are being conducted in cooperation with the Secretary's office by the School of Pharmacy of the South Carolina University and the School of Pharmacy of the South Carolina University and the School of Pharmacy of the Medical College of the State of South Carolina. The members of the House of Delegates and the profession generally are urged to join in this campaign. Some State Medical Societies have entered into an intensive joint plan with the State Pharmaceutical Societies to bring to the attention of the physicians model prescriptions from the National Formulary much more economical and just as effective often times as the higher priced specialties of pharmaceutical houses or ready made prescriptions. The New Jersey State Medical Society Journal in the April issue carries a double page head-line type series of such prescriptions in the center of the Journal, as shown here. Members of the Council and other officers may well present this matter to their respective societies and definite programs should be carried out as opportunity offers. If this is done prescription writing may not become a lost art as many people believe is the case now.

The changing times calls for an appraisal of the entire resources of the South Carolina Medical Association to meet the issues of organized medicine in general and to this end a survey has been made of the activities of all of the State Medical Societies in the United States. This survey includes first the annual dues of the other state medical societies and second the major projects for which this money is expended. The survey discloses the fact that three fourths of all the State Medical Societies have larger dues than South Carolina. It must be borne in mind that the dues of the South Carolina Medical Association stand at five dollars (\$5.00) the same as they were when the Association was organized eighty eight years ago. The large majority of other State Medical Societies have been forced to increase their dues in the past few years. A list of these dues and the States follow herewith:

Alabama—Councilors \$10.00, Members \$3.00. There are a large number of Councilors; Arizona—\$12.00; Arkansas—\$5.00; California—\$10.00; Colorado—\$10.00; Connecticut—\$5.00; Delaware—\$10.00; District of Columbia—\$20.00; Florida—\$7.00; Georgia—\$6.00; Idaho—\$12.00; Illinois—\$8.00; Indiana—\$7.00; Iowa—\$10.00; Kansas—\$10.00; Kentucky—\$5.00; Louisiana—\$6.00; Maine—\$8.00; Massachusetts—\$10.00; Michigan—\$10.00; Minnesota—\$15.00; Mississippi—\$4.00; Missouri—\$8.00; Montana—\$5.00; Nebraska—\$10.00; Nevada—\$10.00; New Hampshire—\$6.00; New Jersey—\$13.00; New Mexico—\$5.00; New York—\$10.00; North Carolina—\$10.00; North Dakota—\$5.00; Ohio—\$5.00; Oklahoma—\$4.00; Pennsylvania—\$7.50; Rhode Island—\$10.00; South Dakota—\$5.00; South Carolina—\$5.00; Tennessee—\$6.00; Texas—\$8.00; Utah—\$10.00; Virginia—\$5.00; Washington State—\$5.00; West Virginia—\$10.00; Wis-

consin—\$15.00; Wyoming—\$10.00.

It will be noted that nearly all of the South Atlantic States have been forced to increase their annual dues. The last one of these states is North Carolina with dues increased to ten dollars (\$10.00) in 1935. In a break down of their disbursements it is noted that one major item alone is twenty-five hundred dollars (\$2500) for legislative activities. California, perhaps, is in the lime light now for its many activities as much as any State. They have dues of ten dollars. The major interests for which this money is expended are as follows:

1. California and Western Medical Journal.
2. Legislation.
3. Post Graduate Courses for Members.
4. Annual Meeting.
5. Committee Expenses—\$30,000 in 1935.
6. Department of Public Relations—\$10,000.00.
7. Press Releases.
8. Public Health Education.
9. Fairs and Public Health Exhibits.
10. Legal-Court Opinions from the Supreme Court.
11. Defeat of Cults.
12. Delegates to A. M. A.
14. Headquarters Expenses.
15. Council Expenses.

A few still provide for mal-practice insurance. A few states employ a layman, often a man with newspaper experience as Executive Secretary. One of these men, however, is a lawyer and gives his whole time to the work. This State is Kansas where the American Medical Association will meet in May.

Assuredly no State Medical Association has ever been so bereaved as to have lost two Presidents in one fiscal year. This situation faced us during the year 1935. The Secretary's office was called upon therefore as never in its history to meet these sudden emergencies arising from the loss of our leaders. Thanks to the cooperation of the President-Elect, the members of the Council, and the members of the Association the work went on without serious interruption. Your Secretary is profoundly grateful for this unreserved helpfulness in a great emergency. The Association is now ready to go forward and keep step with the march of progress everywhere evident in 1936.

#### REPORT OF TREASURER

Seneca, S. C. April 19, 1936

Dr. E. A. Hines, Sec.-Editor,  
South Carolina Medical Association,  
Seneca, S. C.  
Dear Sir:

At your request, I have audited the books of the South Carolina Medical Association and the Journal of the South Carolina Medical Association for the year 1935. Hereto attached are statements of receipts and disbursements with certificates supporting Postal and bank balances reported.

A substantial gain is shown in membership dues, subscriptions, and advertising over 1934. A total

of 55 per cent has been paid on balances in the Seneca Bank, leaving a total amount of \$1,190.83 due to the Association and Journal from this closed bank.

Yours truly,  
Frances R. Richardson,  
Auditor.

The South Carolina National Bank  
Seneca, S. C.  
April 18, 1936

Dr. E. A. Hines, Treas.,  
South Carolina Medical Association,  
Seneca, S. C.

Dear Sir:

This is to certify that there was on deposit in the South Carolina National Bank, Seneca, S. C., as of December 31st, 1935, in the name of Dr. E. A. Hines, Treasurer, South Carolina Medical Association the sum of \$942.34.

We further certify that there was on deposit to the credit of the Journal of the South Carolina Medical Association, as of December 31st, 1935, the sum of \$1661.38.

Very truly yours,  
C. V. Stribling, Manager.

The South Carolina State Bank,  
Receiver, The Seneca Bank,  
Seneca, S. C.  
April 20, 1936

Dr. E. A. Hines,  
Seneca, S. C.

Dear Sir:

We certify that as of December 31, 1935, the balance due on claim of Dr. E. A. Hines, Treasurer of the South Carolina Medical Association against the Seneca Bank (defunct), was \$269.34.

We further certify that the claim of the Journal of the South Carolina Medical Association against the Seneca Bank as of December 31st, 1935 was \$470.01, and balance due on Certificate of Deposit \$451.48.

Very truly yours,  
The South Carolina State Bank,  
Receiver, the Seneca Bank  
(By) C. V. Stribling, Manager.

United States Post Office,  
April 20, 1936  
Seneca, S. C.

Dr. E. A. Hines,  
South Carolina Medical Association,  
Seneca, S. C.

My dear Sir:

An examination of the accounts in this office shows that your Postal Savings account has a balance, as of December 31, 1935, of \$1,000.

Yours very truly,  
Ray Phillips, Postmaster.

# STATEMENT OF RECEIPTS AND DISBURSEMENTS SOUTH CAROLINA MEDICAL ASSOCIATION

For Year Ending Dec. 31st, 1935

## RECEIPTS

Balance in Banks Jan. 1, 1935	
Defunct Seneca Bank -----	\$ 269.34
S. C. National Bank -----	510.21
Postal Savings -----	1,000.00
	<hr/>
Membership Dues -----	\$1,779.55
Refund Check Tax -----	1,935.00
	<hr/>
	3,714.57
	<hr/>

## DISBURSEMENTS

Printing -----	497.86
Salary Stenographer -----	200.00
Salary Sec.-Editor -----	150.00
Office Equipment -----	100.00
Stamps -----	40.14
Travel Expenses Sec.-Editor ----	100.00
Expenses Official Stenographer	
Convention -----	109.74
Expenses Invited Guest Conven-	
tion -----	58.65
Expenses Two Delegates Ameri-	
can Medical Association ----	175.00
Sundries -----	46.50
Annual Audit -----	25.00
Balance in Banks Dec. 31, 1935	
Defunct Seneca Bank -----	269.34
S. C. National Bank -----	942.34
Postal Savings -----	1,000.00
	<hr/>
	2,211.68
	<hr/>
	3,714.57
	<hr/>

# STATEMENT OF RECEIPTS AND DISBURSEMENTS JOURNAL SOUTH CAROLINA MEDICAL ASSOCIATION

For Year Ending Dec. 31st, 1935

## RECEIPTS

Balance in Banks Jan. 1, 1935	
Defunct Seneca Bank -----	\$ 921.49
S. C. National Bank -----	851.76
	<hr/>
Subscriptions -----	1,773.25
Advertising -----	1,290.00
Refund -----	2,049.48
	<hr/>
	2.34
	<hr/>
	5,115.07
	<hr/>

## DISBURSEMENTS

Printing -----	1,350.00
Salary Sec.-Editor	
Bal. Due 1934 -----	512.20
Paid on 1935 -----	409.00
	<hr/>



Salary Stenographer .....	150.00	Assets as of Dec. 31, 1935	
Office Equipment .....	50.00	Cash in Banks and Postal Savings .....	4,794.55
Sundries .....	51.00	Furniture and Fixtures .....	874.77
Stamps .....	10.00		<hr/>
Balance in Banks Dec. 31, 1935			5,669.32
Defunct Seneca Bank .....	921.49	Liabilities as of Dec. 31, 1935	
S. C. National Bank .....	1,661.38	Due E. A. Hines on Salary 1935 .....	1,491.20
	<hr/>	Due Stenographer on Salary 1935 .....	250.00
	5,115.07		<hr/>
	<hr/>		1,741.20

COMBINED STATEMENT OF RECEIPTS AND  
DISBURSEMENTS SOUTH CAROLINA MEDICAL  
ASSOCIATION AND JOURNAL OF  
SOUTH CAROLINA MEDICAL  
ASSOCIATION  
For Year Ending Dec. 31st, 1935

RECEIPTS	
Balance in Banks Jan. 1, 1935	
Defunct Seneca Bank .....	\$1,190.83
S. C. National Bank .....	1,361.97
Postal Savings .....	1,000.00
	<hr/>
	\$3,552.80
Advertising .....	2,049.48
Subscriptions .....	1,290.00
Membership Dues .....	1,935.00
Refunds .....	2.36
	<hr/>
	8,829.64
DISBURSEMENTS	
Printing .....	1,847.86
Salary Stenographer .....	350.00
Salary Sec.-Editor	
Bal. Due 1934 .....	512.20
Paid on 1935 .....	559.00
	<hr/>
	1,071.20
Travel Expenses Sec.-Editor .....	100.00
Expenses Official Stenographer	
Convention .....	109.74
Expenses Invited Guest	
Convention .....	58.65
Expenses Two Delegates American Medical Association .....	175.00
Office Equipment .....	150.00
Stamps .....	50.14
Sundries .....	97.50
Annual Audit .....	25.00
Balance in Banks Dec. 31, 1935	
Defunct Seneca Bank .....	1,190.83
S. C. National Bank .....	2,603.72
Postal Savings .....	1,000.00
	<hr/>
	4,794.55
	<hr/>
	8,829.64
	<hr/>

LIST OF MEMBERS BY COUNTIES, 1935

	Paid	Hon.
Abbeville .....	4	5
Aiken .....	8	
Allendale .....	1	
Anderson .....	34	5
Bamberg .....	9	
Beaufort-Jasper .....	2	
Berkeley .....	7	
Calhoun .....	1	
Cherokee .....	9	2
Chesterfield .....	7	
Chester .....	7	5
Charleston .....	86	9
Colleton .....	9	
Columbia .....	88	21
Darlington .....	11	
Dillon .....	2	
Edgefield .....	3	
Fairfield .....	3	
Florence .....	18	1
Greenville .....	88	9
Greenwood .....	18	
Georgetown .....	2	
Hampton .....	1	
Horry .....	1	
Kershaw .....	14	
Lancaster .....	7	
Laurens .....	5	4
Lexington .....	3	2
Marion .....	8	
Marlboro .....	8	1
Newberry .....	19	1
Oconee .....	4	4
Orangeburg .....	20	
Pickens .....	12	3
Saluda .....	2	
Spartanburg .....	45	6
Sumter .....	17	5
Union .....	10	5
Williamsburg .....	9	
York .....	22	3
	<hr/>	<hr/>
	624	91
Honorary Fellows .....	91	
Total Membership .....	715	

## OBSTETRICS AND GYNECOLOGY

J. D. GUESS, M.D., GREENVILLE, S. C.

FACTS AND REFLECTIONS OBTAINED  
FROM A STUDY OF THE REPORT OF  
THE COMMITTEE ON MATERNAL  
WELFARE

Among the highlights of the recent meeting of the House of Delegates of the South Carolina Medical Association was the report of the committee on maternal welfare so ably presented by the committee's chairman, Dr. Robert E. Seibels of Columbia. The full report was voluminous and detailed, and printed copies were distributed to the delegates, but Dr. Seibels gave a verbal resume of his committee's findings. The committee is to be commended for the care and thoroughness of its work, and the chairman, who with the assistance of his no less intelligent than charming wife worked up the statistical compilations, deserves the thanks of all those interested in maternal welfare in South Carolina.

Certain facts in the report are deserving of reiteration, and give rise to reflections, a consideration of which should prove helpful.

Three hundred and eighty-four death certificates were studied by the committee, but because of insufficient obtainable data only 235 deaths were included in the analysis. During the period under study, July 1, 1934, to June 30, 1935, there occurred 39,698 live births, with a mortality of 9.6 per thousand. This is slightly more than 50 per cent higher than the latest available figure for the registration area of the United States, namely, 6.3 per thousand live births, a difference too great to ascribe either to a lack of skill on the part of South Carolina physicians or to the incidence of delivery of midwives. It gives rise to the thought that perhaps the number of live births reported is far too low, the deaths being more certainly reported. It would be interesting to know what effect upon the mortality standing of our state a complete reporting of live births would make. Unfortunately it is not only the midwives who are careless in filling birth certificates.

Further, the committee found sufficient evidence to warrant the elimination of 29 deaths from the study on the grounds that these deaths were not puerperal. Many of those retained required much investigation and some analytical deduction to determine just what was the true cause of death. Surely this was due not to ignorance or to a desire to hide the true facts, but to carelessness and incompleteness in statement of the facts. By far the majority of the certificates eliminated were signed by physicians rather than by laymen.

Of the live births reported for the year under study, only half were attended by physicians, the other being attended by midwives or other laywomen, a distinction without a difference in most instances making it practicable to include both groups in the term midwives. Physicians delivered 17,058 white children and 3,013 colored children, while midwives delivered 2,422 white children and 17,205 colored children, almost a reversal of figures for white and colored. In Georgetown county only 49 births, both white and colored, were reported by physicians, whereas 425 were reported by midwives. If midwives are responsible for our high mortality rate, then they must either be better trained and supervised, and be made to report their cases when engaged so that some effort can be made to give such cases prenatal care, or else we may expect no great improvement. Reference will again be made to the matter of prenatal care for these cases.

Of the total number of deaths studied, 76 per cent were caused by a group of three conditions, namely, toxemia of late pregnancy, septicemia (not associated with abortion), and hemorrhage, either antepartum, intrapartum or postpartum, and 59 per cent were due to the first two conditions named. Certain it is that fatal toxemia and sepsis are largely preventable, and deaths from hemorrhage should be very rare. Deaths from toxemia are an index of the amount and kind of prenatal care



received, and deaths from septicemia are an index of obstetrical conscience and knowledge of the attendant.

Deaths from toxemia of late pregnancy and those from septicemia, were one-half again as frequent in the colored women as in the white, while deaths from hemorrhage in the colored were three times those in whites. Does the relative mortality from toxemia indicate better prenatal care for the whites? It should, but it does not, because of the total number of women who died, only five received what by any standard could be termed adequate prenatal care. The probable explanation is that more white women received medical care after the toxemia had developed, and so more of them were saved from death, than was the case with colored women. Twenty of the 100 women who died of late toxemia were never treated by a physician and in all others a midwife was relieved by a physician, probably when the disease was far advanced. Thus the doctor did not have a chance in one-third of these cases, and likely in many of the other two-thirds he had little better chance, and doubtless these facts apply to colored women nearly twice as frequently as they do to white women.

The case of the doctor cannot be made hardly so good in the septicemia deaths. Thirty-two of the 54 cases dying of sepsis, were delivered solely by physicians, while in 22 there was a midwife alone or a midwife relieved by a physician. Thus in 60 per cent of these deaths there was no divided responsibility. Was the physician more careless with his colored patients than with his white patients, or is there some other explanation, perhaps, based on personal habits, sexual habits, or latent venereal infection which explains the higher incidence of deaths from sepsis in the negro?

One would expect a higher incidence of deaths from hemorrhage in cases delivered by midwives than in those delivered by physicians. Physicians understand better the technique of uterine massage, they have ergot and pituitrin and they can resort to the intrauterine pack. Midwives deliver a larger proportion of negroes than whites, and multiparity with its higher incidence of postpartum hemorrhage is greater in negroes than in whites.

The facts revealed in the survey, however, do not support the expectation. There were studied 39 deaths from hemorrhage exclusive of that from abortion and ectopic pregnancy. Of these, 20 were of the postpartum variety. Phy-



## WHY CAMP SUPPORTS ARE SCIENTIFICALLY DESIGNED

THE Camp designing staff—with a combined experience of many years in the surgical support field—is constantly endeavoring to render in Camp garments the objectives of various groups of specialists consulted, as well as professional suggestions relayed by Camp nurses detailing all over the world and by Camp dealers.

From the eastern seaboard three years ago and a little later from the West and Midwest came this suggestion from obstetricians: the desirability of a diagonal pull, in addition to the straight around attachments, in a garment designed to support the abdominal walls without disturbing the relationship of the fetus to the pelvis. To effect this abdominal support, and at the same time to provide proper back support, was a task involving considerable difficulties. However, approximately twelve months later—after numerous conferences, many adjustments and trial by various pregnant patients—a new series of prenatal supports was completed, prenatal supports with a diagonal pull, proved by X-ray to support properly the abdominal walls without constriction at any point.

A comparable situation arose with a number of different internists. The desirability of a garment to fit snugly—without discomfort—over thin, protruding hip bones and yet to hold the abdominal organs as high as possible, was obvious from requests by physicians who had prescribed and found wanting in these respects many visceroptosis garments. To provide such a garment involved the manufacture of a specially made material pliable enough to fit like a hood over the crest of the ilium and sufficiently firm to support the abdominal organs. Only after two years of collaboration and painstaking investigation was there ready for distribution a series of such garments.

Thus is the designing room at the Camp factory a veritable melting pot of professional desires and design possibilities. This is why Camp supports are scientifically designed.

sicians alone were in attendance upon 37, 15 of which were caused by postpartum bleeding, while there were only seven deaths from hemorrhage of all types in cases attended by midwives relieved by physicians. One is led to wonder if surgical interference, or the use of pituitrin to hasten delivery was the determining factor in the markedly higher incidence of fatal hemorrhage in the cases delivered by physicians.

(To be Continued)

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Type used in each issue of The Journal is held for thirty days and in order to get the benefit of this saving, orders should be received within this time.

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COMPANY, Inc.**

Greenville, S. C.



# Westbrook Sanatorium

## Richmond, Virginia

TELEPHONE—5-3245

*Department for Men*

J. K. HALL, M. D.  
O. B. DARDEN, M. D.  
E. H. ALDERMAN, M. D.

*Department for Women*

P. V. ANDERSON, M. D.  
E. H. WILLIAMS, M. D.  
REX BLANKINSHIP, M. D.

THE SANATORIUM is a private institution with 150 beds, located in the Ginter park suburb on the Richmond-Washington National Automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

THE PLANT consists of fourteen separate buildings, most of which are new, located in the midst of a beautifully shaded 50-acre lawn, surrounded by a 120-acre tract of land. Remoteness from any neighbor assures absolute quietness.

THE LARGE number of detached buildings makes easy, satisfactory and congenial groupings of patients. Separate buildings are provided for men and women. Rooms may be had single or *en suite* with or without private bath. A few cottages are designed for individual patients.

THE BUILDINGS are lighted by electricity, heated by hot water, and are well equipped with baths.

THE SCOPE of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Five physicians reside at the sanatorium and devote their entire attention to the patients. A chartered training school for nurses is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

SYSTEMATIZED out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

THE SANATORIUM maintains its own truck farm, dairy, and poultry yards.

*Illustrated Booklet on Request*

# THE JOURNAL

of the

## South Carolina Medical Association

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VOLUME XXXII

June, 1936

NUMBER 6

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### THE RELATION OF NUTRITIONAL DEFICIENCIES TO THE DEVELOPMENT OF HEART FAILURE IN ORGANIC HEART DISEASE

By

WILLIAM B. PORTER, M.D.,  
*Medical College of Virginia,*  
Richmond, Virginia

When failure ensues in chronic heart disease, it is obligatory that one ascertain the determinant forces which have operated in upsetting the stability of the previously existing compensatory mechanisms.

To merely note the existence of a chronic valve disease, hypertension, arteriosclerosis, or cardiac enlargement is manifestly inadequate, for these had existed probably for many years, during which time heart failure was not an associated syndrome.

A more comprehensive approach to the problem must be concerned with the physiologic efficiency of the myocardium which manifestly involves a consideration of those factors that may lessen the essential elements necessary for the maintenance of an optimal degree of heart muscle fitness.

In the final analysis heart failure ensues, (a) when the nutritive supply to the muscle fibres is not sufficient to meet the metabolic needs for adequate energy production; (b) when the quantity of muscle tissue is reduced by disease below that level sufficient for the work load; and (c) when the myocardium, because of hypertrophy and other biological changes in the muscle fibre, is unable to effectively utilize an amount of material sufficient for energy requirement.

Illustrative of this concept one may recall two problems in cardiology observed frequently in medical practice. First (a), is the patient who develops rapidly a fatal degree of heart failure following an occlusion of a major branch of a coronary artery. In such an event the absolute work load is suddenly lessened because of the marked reduction in the peripheral blood pressure from a previously high level, nevertheless heart failure promptly ensues because of the sudden reduction in the effective heart muscle tissue. Second (b), is the patient who has a persistent and excessively elevated systolic and diastolic blood pressure, and who finally develops progressive heart failure, which is irreducible, and which ends in death. A study of the heart at the necropsy shows a greatly increased muscle mass, but no evidence of disease unless hypertrophy of the muscle fibres be so interpreted. Judging by a commonly accepted standard, one concludes that the coronary vessels were normal and adequate to meet the nutritional needs of the heart muscle. However, it must be remembered that the hypertrophied heart requires an increased blood supply in direct ratio to its increase in surface area, and the chemical exchange in an hypertrophied muscle fibre is handicapped by the increase in the distance chemical substances must travel from the capillary wall to the center of the muscle cell. Hence, the conclusion that the coronary blood supply is adequate is subject to valid criticism. The coronary vessels would have supplied a sufficient blood volume for a heart muscle normal in cubic area, but they were inadequate for the greatly increased muscle area. The problem is one of relative coronary insufficiency, for the available nutrition was not sufficient to

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Address as invited guest before the South Carolina Medical Association, Greenville, S. C., April 23, 1936.



meet the demands of the greatly increased energy requirements.

It is evident that heart failure is not contingent upon an increase above the theoretical normal base line of heart work (strain), but rather upon the relationship of work load and the physiologic efficiency of the myocardium.

The nutrition of the heart muscle, like that of all tissues in the body, is dependent upon the substances brought to it by the blood, and it is necessary not only that a normal volume of blood circulate around the tissue cells, but also that its quality be normal. If the quality is impaired, the circulating volume must be increased, or, if the volume is reduced, the concentration of important elements must be raised lest cell metabolism suffer.

There have been available for many years data on the bio-chemistry of muscle physiology which is immediately concerned with the function of the myocardium and conversely with development of heart failure.

The physiologic integrity of the heart muscle is dependent upon glucose, insulin and oxygen, and there exists an obligatory interdependency between these elements.

Briefly stated these data are: an adequate supply of oxygen must be available at all times since the conversion of glucose to glycogen in the heart muscle is dependent not only on insulin but also upon a free oxygen supply. The energy for muscle contraction comes from the breaking down of phosphagen but the energy for the resynthesizing of phosphagen is derived from the breaking down of glycogen to lactic acid. The lactic acid is reconverted into glucose and the glucose, under the influence of oxygen and insulin, reconverted into glycogen. Thus, continued heart muscle contraction may be interrupted by lack of phosphagen, or depletion of muscle glycogen, and these deficiencies in turn result from failure in adequate supplies of oxygen and insulin.

The more recent studies on muscle physiology have supplied additional data indicating the importance of an adequate supply of mineral salts, and it is to be anticipated that shortly experimental evidence will be available confirming the convincing clinical data which will demonstrate the fundamental importance of specific

organic substances, particularly complete proteins and some of the well known vitamins. It has been shown both clinically and experimentally that, with a reduction in the coronary blood flow, it is obligatory that the concentration of glucose in the blood be raised if a normal muscle glycogen is to be maintained. It is highly probable that this is equally true of all other substances essential to muscle physiology.

In judging the importance of food deficiencies as related to heart failure, two questions are immediately presented for consideration. These are: (a) Is the normal heart so affected in avitaminosis that its functional integrity is impaired to the degree that heart failure develops; and (b), is the diseased heart affected by sub-clinical types of the deficiency diseases to the degree that heart failure prematurely ensues?

a. The first can be answered in the affirmative for it is well known that in beriberi, a disease which is primarily the result of vitamin B1 deficiency, there occur in the myocardium definite changes consisting of hydropic degeneration of the muscle fibers and intercellular edema.

Clinical observation reveals varying degrees of cardiac dilatation and failure with the usual cardinal signs of heart failure of the congestive type, with increased venous pressure, an enlarged and tender liver, and edema. Relief is promptly obtained from bed rest and a diet rich in vitamin B1.

b. In the consideration of the second proposition, the answer is of necessity subject to reservations. The evaluation of the importance of subclinical deficiency diseases in solving the problem of the bizarre and unexpected behavior of chronic disease is fraught with many pitfalls. Nevertheless, the problem becomes much simpler when one appreciates the fact that deficiencies in the elements essential to optimal nutrition rarely exist as a single deficiency; but, rather as a group deficiency with merely a preponderance of the clinical characteristics of one essential factor.

The importance of the full appreciation of this truth is obvious for one is rarely able to find a dietetic history indicating a complete lack of any one single essential food; but, rather, an

inadequate amount of many with a significant deficiency of one factor predominating.

There have been selected from our records patients who appear to warrant the conclusion that there operated in them, in precipitating heart failure, a factor which was reducible and which was probably nutritional in character.

*Case I: J. P.* Diet deficient in complete proteins, protective foods, and in total calories.

A negro man, 70 years old (age uncertain), entered the hospital on October 4, 1935. The history was vague but it indicated that the patient had become increasingly breathless over a period of several weeks and that for the past three weeks edema had increased rapidly, and was at the time of admission very extensive.

Examination showed an elderly man who was manifestly malnourished showing extensive general edema with ascites and moderate effusion in both pleural cavities. The patient was markedly breathless, there was extreme distension of the neck veins, and the liver was tender and 7 cm. below the costal margin. The heart was greatly enlarged, the left border extending out to the anterior axillary line in the sixth interspace and was approximately 13 cm. from the mid sternal line. The first sound was lacking in muscle quality and there was a suggestive mid diastolic gallop; there were no murmurs. The rhythm was interrupted by an occasional ventricular extrasystole. The aortic and pulmonic second sounds were equal and moderately increased in intensity and amphoric in quality. The blood pressure was 140/100. The peripheral vessels showed a moderate amount of arteriosclerosis, not unusual for the patient's age. The lungs showed dullness over both bases posteriorly and the physical findings of congestion indicated by heart failure rales. The breath sounds were distant over the lung margins suggesting a moderate amount of pleural effusion. There was wide spread body edema extending up to the clavicle, and the phenomena of a moderate amount of ascitic fluid.

**Laboratory Data:** Blood chemical studies revealed a non-protein nitrogen of 41 mg., total protein 5.3 per cent; albumin 3.7 per cent; and globulin 1.6 per cent. Unanalysis: heavy trace of albumin, specific gravity 1.020, no casts, blood

or pus. Blood count: Hemoglobin 71 per cent; 3,800,000 red cells, 7,900 white cells; 65 per cent polys.

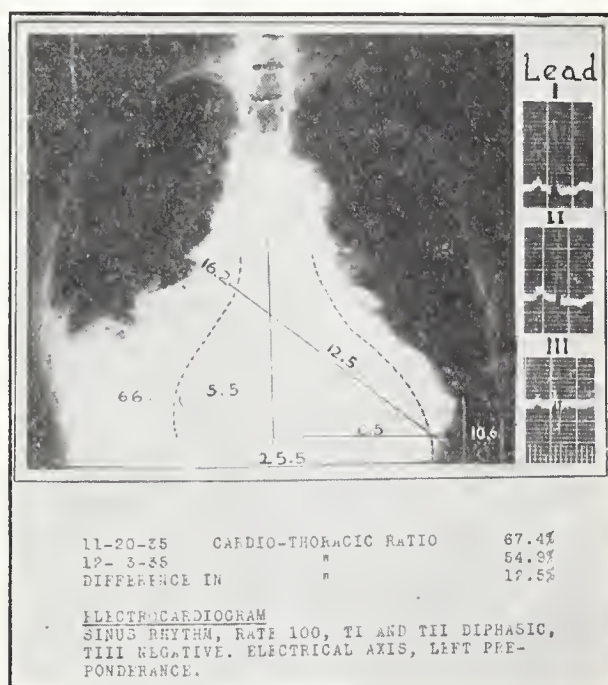
#### Admission Diagnosis:

1. cardiac hypertrophy and dilatation
2. arteriosclerosis
3. myocardial fibrosis secondary to coronary insufficiency
4. beriberi heart (subclinical avitaminosis B1)?

**Clinical Course:** Because of the tremendous amount of edema, it was thought advisable to place the patient on mercurial diuretics. He was given salyrgan on three successive days, 1 cc., 1 1/2 cc. and 2 cc. Within a period of four days he lost 45 pounds in weight. Following salyrgan therapy the patient was placed on digitalis and a high caloric diet, rich in proteins and water soluble vitamins. His clinical improvement was dramatic and the patient left the hospital symptom free. (Chart I, Plate I).

Since leaving the hospital, the patient has been seen at regulated intervals and he has remained free from symptoms although the heart remains moderately enlarged in spite of a normal blood pressure.

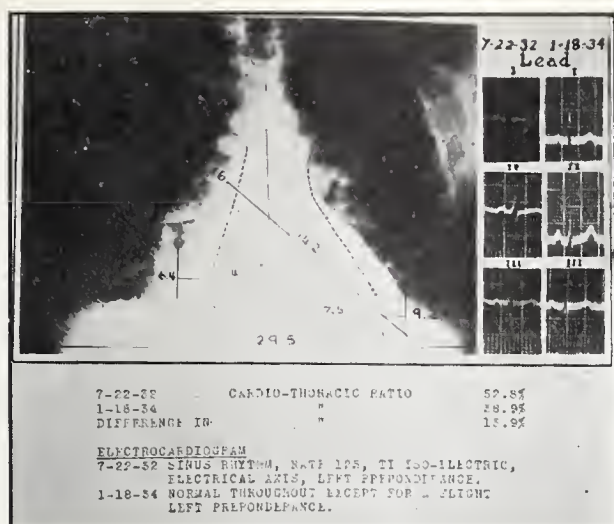
It is perfectly evident that the patient had structural disease in the cardio-vascular systems, yet, the marked change in cardiac size and rapid and sustained clinical improvement



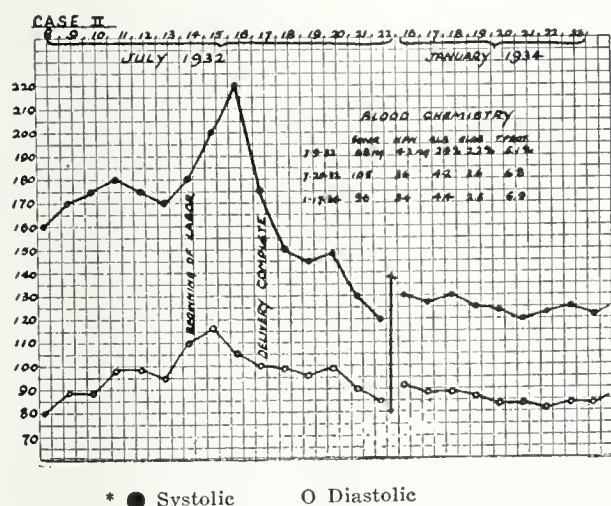
\*Dotted line indicates reduced heart size superimposed on the original teleroentgenogram.







\*Dotted line indicates reduced heart size superimposed on the original teleroentgenogram.



this patient were hypertension and albumin in the urine. These findings prompted restrictions in the patient's dietetic regime. This may have resulted in a subclinical deficiency disease which, in combination with pregnancy, hypertension and a moderate degree of coronary insufficiency (age 42) conceivably precipitated the acute cardiac episode. This appears reasonable when one notes the restoration to normalcy following the reduction in blood pressure, delivery and resumption of a normal diet.

#### Case III: G. A. J.

White male, aged 65, was admitted on November 18, 1932, and discharged on December 15, 1932.

Chief complaint: Breathlessness and swelling of the feet and legs.

He stated that for the past few years effort had induced breathlessness, but that the breath-

lessness had gradually increased in intensity up to six weeks ago, at which time it became so severe that it was necessary for him to remain in bed propped up on a back rest. In addition to these symptoms he had been having for the past three or four week difficulty in voiding, and recently he had been getting up from eight to ten times every night in an effort to empty his bladder. Otherwise, his history was not significant.

**Physical Examination:** The patient was orthopneic and coughed frequently. The neck veins were markedly distended. The lungs were hyper-resonant to percussion both anteriorly and posteriorly except over the bases where the percussion was slightly dull, and there were moist rales over the chest both anteriorly and posteriorly extending as high as the third rib. The cardiac apex was in the sixth interspace and extended out to the anterior axillary line; the left border was approximately 13 cm. from the mid sternal line. Auscultation: there were no murmurs; the first cardiac sound was distant, but there was no gallop rhythm; both aortic and pulmonic second sounds were slightly increased in intensity and were amphoric in quality. The pulse rate was 76 to the minute, and regular. The peripheral arteries showed a moderate degree of thickening and the blood pressure was 135/75. The abdomen was distended, apparently containing a considerable amount of ascitic fluid and the liver was enlarged 7 cm. below the costal margin and was slightly tender. There was marked edema of the lower extremities extending up above the crest of the ilium. The bladder was easily palpated above the pubic bone and 550 cc. of urine were obtained with the catheter.

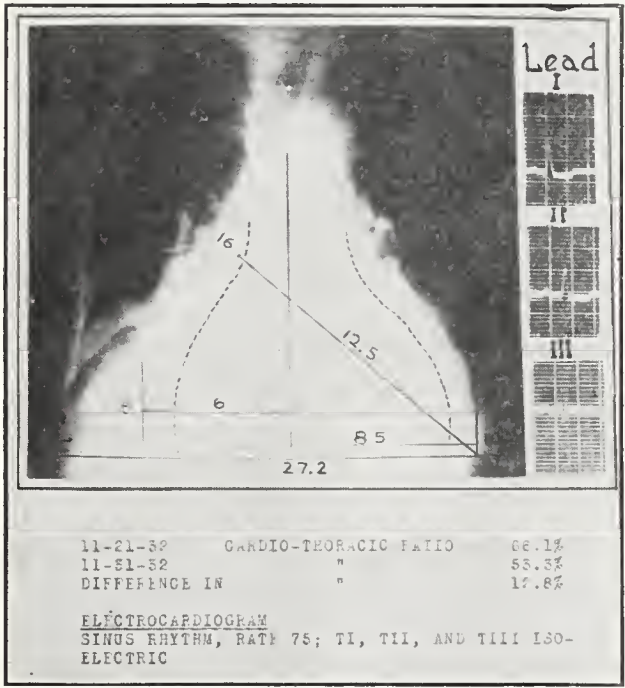
#### Diagnosis:

1. Cardiac hypertrophy and dilatation
2. Arteriosclerosis
3. Prostatic hypertrophy
4. Congestive heart failure

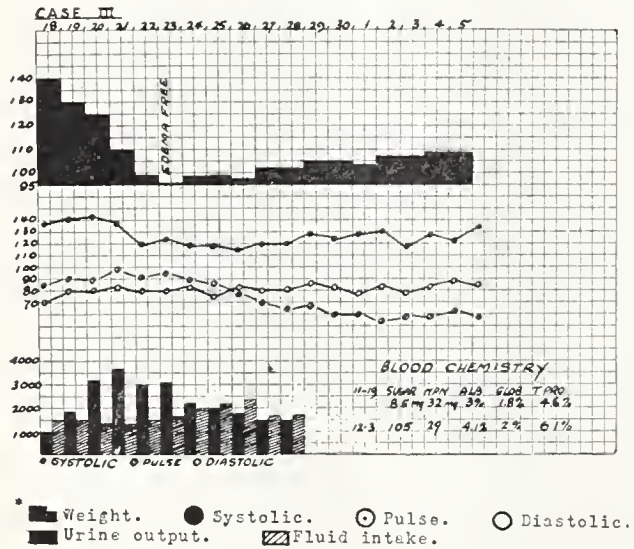
**Course in the hospital:** The patient was placed in bed, limited in diet and fluid intake and given adequate doses of digitalis. It is significant that his weight began to decrease and the edema to disappear almost immediately after the beginning of bed rest, and before



the effects of digitalis could have influenced the clinical course of the patient. After reduction of edema, the patient was put on a general diet and left the hospital apparently entirely relieved of all cardio-vascular symptoms. The heart had reduced to approximately a normal size. (Chart III, Plate III).



\*Dotted line indicates reduced heart size superimposed on the original telerontgenogram.



In the absence of infection, an increase in blood pressure, a coronary occlusion, or a disturbance of cardiac mechanism, one is forced to conclude that some factor, probably nutritional, was operating in the precipitation of heart failure. The very prompt response to therapy, and particularly the marked reduction in cardiac size are similar to the clinical be-

havior of the beriberi heart. The dietetic history was not conclusive, but it indicated a marked preference for bread, fats and sweets.

Discussion:

In the general consideration of the problem of nutritional deficiencies as related to heart failure in organic heart disease, certain fundamental facts exist which are relevant. Severe degrees of avitaminosis can and do produce fatal degrees of heart failure in young and previously healthy individuals. This is illustrated by the heart failure seen in beriberi B1 avitaminosis.

When a heart is altered by disease its nutritional needs are increased and its cellular metabolism is slowed down due to increase in surface area of the muscle fibres incident to hypertrophy and dilatation. It is readily conceivable, therefore, that subclinical degrees of nutritional deficiencies may alter the physiologic "fitness" of the myocardium to the end that congestive failure ensues. It is difficult to incriminate specific food factors, but our feeling is that deficiency in the water soluble vitamins and complete proteins, meat, eggs and milk are the most important elements concerned.

The cases here presented strongly indicate the importance of nutritional factors operating in association with organic heart disease in precipitating, prematurely, heart failure. It is doubtful if either factor was sufficiently severe to independently disturb the developed compensatory mechanism, yet, occurring together, serious consequences resulted.

The age of the patients and the physical data suggest that varying degrees of coronary insufficiency existed in these patients.

It is suggested that such patients are peculiarly liable to the serious consequences of sub-clinical deficiency diseases for, with a reduction in the coronary blood flow, it is obligatory that the concentration of all essential elements be increased lest cell metabolism suffer.

It has been said that the fate of a people rests upon an adequate food supply. It is equally certain that the future health of the patient with organic heart disease is definitely influenced by his ability to obtain, ingest and utilize a balanced diet in optimal quantities.

## A STUDY OF HOOKWORM DISEASE

By

G. R. O'DANIEL, M.D.,  
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In the years 1932 and 1933 the writer made stool examinations on 1,425 persons in Dorchester County. These examinations were in the majority of instances made on persons who gave a history of ground itch. Out of the total number of examinations made, four hundred and thirty-six (436), or thirty and five-tenths per cent, were found to be positive for hookworm disease. I might say that a few of these examinations were re-examinations following treatment. A total of twenty-eight, or slightly less than 2 per cent, were found to have ascaris infection.

Several years ago Doctor Charles W. Stiles, an international authority on hookworm disease, challenged a statement of the Rockefeller Foundation that hookworm disease was no longer a health problem in the Southern States. The writer corresponded with Doctor Stiles and told him that he thoroughly agreed with him in his views.

Hookworm disease is a sadly neglected disease in the South. The Rockefeller Foundation some years ago put on an intensive hookworm campaign in the Southern States, and although the results of this campaign were far-reaching, the disease continues to be a real public health problem in certain portions of the South.

This study revealed that hookworm disease is much more prevalent in the white than in the colored race. It is unusual to obtain a history of severe ground itch in a negro. Heavy infections with hookworms are common in the white race but rare in the colored race based on our findings. It appears from our study that hookworm disease is more prevalent in half-breeds or mulattoes than in the pure negro.

It is unlikely that a heavy hookworm infection would be difficult to diagnose in a locality where the disease is prevalent. However, the disease may simulate a number of other conditions very closely. Uncinariasis may produce a generalized edema, giving the patient somewhat the clinical picture of cardio-renal disease. The patient often has marked dyspnoea, and this symptom, along with edema, may at first sight lead the

physician to make a snapshot diagnosis of heart or kidney disease. However, on closer examination, the profound pallor that usually accompanies a heavy hookworm infection should at once suggest a stool examination.

A systolic murmur that some times results from uncinariasis may sometimes be confusing to the physician. This murmur is haemic, and is the result of anaemia. Any anaemia which is unexplained should always have hookworm disease ruled out a causative factor. I know of very few conditions that will produce the profound pallor found in hookworm disease.

Whenever a differential blood count reveals an eosinophilia, a stool examination is indicated. Several years ago I had occasion to examine a patient with an acute abdomen and I made a blood count to rule out appendicitis. This patient had an eosinophilia of twelve per cent, so I immediately advised a stool examination. The stool was positive for hookworm ova. Of course, the acute abdomen bore no relationship to the hookworm infection most likely, but I merely cite this case to illustrate the value of a blood count in diagnosing intestinal parasites.

One of the children examined in this series, although only four or five years old, had a general anasarca and resembled a severe cardio-renal case. However, her profound anemia at once suggested a stool examination. The stool examination revealed hookworm disease.

A man past fifty years old came into my office who had been treated for hookworm disease eight years previously. A stool examination was positive for hookworm disease. He stated that he had continued to go barefooted since receiving treatment eight years previously. Some weeks later he came into my office and stated that he had been passing blood in his stools. He was extremely weak and complained of pain in his epigastrium and this discomfort increased after eating. He complained of constipation as well as flatulence. A physical examination revealed a generalized tenderness over the entire abdomen, but the tenderness was most pronounced over the epigastrium. The patient was very much underweight. In view of his age, underweight, gastric symptoms, and the passage of blood in the stools I was under the impression that he had either a gastric carcinoma or a gas-



tric ulcer. Stool examination revealed a stool of tarry appearance. Microscopic examination of the stool revealed that the patient still had a rather heavy hookworm infection which, in my opinion, may have accounted for all the symptoms of which he complained.

I have examined a number of patients who stated that they had received treatment for hookworms in the past. A number of these patients were found to still have hookworm infection. Some may argue, and rightfully, that an added infection has been gotten since the person was last treated, but judging from my experience this will often only partially account for the present infection. Many of these patients were doubtless never completely ridded of their original infection.

There are three things to be sought for in properly eradicating hookworm disease. First, rid the patient of the parasite; second, educate him to wear shoes; and third teach him a proper method of sewage disposal. Eradication of the disease is largely a matter of education.

I have had two patients with heavy hookworm infection who had marked choreic manifestations. This manifested itself by a twitching of the eyes and face at frequent intervals. One of these patients ceased to have symptoms of chorea after receiving hookworm treatment. I was unable to follow up the other patient.

I know of two patients who were advised by their physician to have laparatomies but on the advice of other physicians stool examinations were made. The treatment for hookworms saved these patients from useless operations.

A stool examination is a very simple procedure, and every patient who comes into your office is entitled to this examination. The method I use is the brine flotation method. A small portion of feces is mixed with concentrated salt solution and allowed to stand for thirty minutes. Let me stress the fact that thirty minutes seems to be the ideal length of time to allow the mixture to stand before being examined. If the solution is allowed to stand for a greater length of time either all or part of the ova may disappear. I have examined stools that were heavily infected on examination made at the end of one-half hour, and on further examination some time later have found it most difficult to find any ova

whatsoever. This results from a difference in osmotic pressure, with the result that the eggs rupture. A small wire loop made from ordinary screen wire is used to loop off several drops of the upper portion of the stool on a glass slide for microscopic examination. Authorities tell us that the severity of the symptoms of hookworm disease does not seem to always depend upon the number of hookworms. Only ten or twelve hookworms have been found in patients who died of the disease. However a patient has been known to recover after more than four thousand (4000) hookworms were expelled. Any hookworm infection regardless of its severity should be treated adequately. Slightly infected cases should be treated not only to rid the patients themselves of the disease, but the cases should also be treated from a public health standpoint.

On one occasion I examined about fifty (50) patients and found only one slightly positive. Previous to that time I had been finding about thirty-three and one-third per cent to fifty per cent of those giving a history of ground itch positive for hookworm ova. Searching for a cause, found that I had recently made up some saline solution with iodized salt. By running controls both with iodized salt and plain salt solutions, I found that iodized salt completely destroys hookworm ova. After talking with several pathologists I found that I had not made any new discovery, but that this fact was already known to them. Several persons have suggested to me that possibly iodine might be used therapeutically in hookworm disease. My reply to them was that hookworm ova are not hatched in the human intestine. Therefore, ridding the person of hookworm ova would not rid them of the hookworm itself.

I know of no disease in which the results of treatment are more outstanding. The gratitude of the patient and the marked difference in his physical appearance and well being are a joy to the physician who has treated the case.

Authorities tell us that the eggs vary in number and that the stools may be negative one day and contain many ova a few days later. Therefore, one examination does not mean that the patient does not have hookworm infection.

I wish to stress the fact that we should not

forget that adults may have hookworm disease. I have seen some very heavily infected adults. Many adults in the rural sections go barefooted in the summer months. We should remember that it is a mistaken idea that only children have hookworm infection.

My experience in treating hookworm disease at the time of this study several years ago was confined purely to the use of Oil of Chenopodium. No serious ill effects were noticed as a result of treatment. Recent literature on the subject leads me to believe that hexylresorcinol would probably be a more effective means of treatment.

In conclusion, let me urge that stool examinations be done routinely on every patient. Let me impress on you also that no case should be dismissed as cured until several subsequent stool examinations have proved negative.

### THE AMMONIACAL DIAPER

By

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Clinton, S. C.

The Ammoniacal Diaper is a clinical entity frequently encountered by pediatricians. The diagnosis is simple, the odor of ammonia being always present to a more or less degree, depending on the concentration. The clinical significance of the ammoniacal diaper lies in the skin irritation which it causes. It is naturally a problem confined to the diaper wearing period and this sets the age as two years and under. According to statistics the condition is severest between the ages of one and two years.

The lesions consist of inflamed cutaneous areas in the region in contact with the diaper, namely, the inner thighs, genitals, buttocks and lower abdomen. Sometimes there is a diffuse redness of the whole diaper region. The characteristic lesions are blebs and vesicles. There may be one at the end of the prepuce; rarely the whole diaper region may show confluent blisters. No vesication is seen, but frequently after the congestion, the whole epidermis becomes hard and cracked and the crest of dead flaky skin finally desquamates.

Frequently in boys a blister develops at the meatus of the penis and subsequently ruptures, causing superficial ulceration, which, in turn,

causes difficulty of urination and possibly hemorrhage. A crust forms over the ulcer and may partially occlude the urethral opening, and the passage of urine removes the crust time after time and irritates the ulcer, causing the healing to take weeks sometimes.

The lesions appear in the morning when the baby has lain wet for a long period during the night. The trouble is confined to those infants who wet the diaper. The irritating urine may initiate patches of eczema in the region which are very difficult to get rid of unless the urinary condition is relieved.

The onset is abrupt and the course irregular. It may last one day if mild or may last for weeks.

A typical illustrative case will illustrate:

"B. C.—a boy, age 4, has nocturnal enuresis. The mother has observed a very strong odor of ammonia. This morning she saw blood stains on the sheets, which alarmed her. Examination revealed the glans penis congested, and an ulcer covered by a crust at the meatus."

### ETIOLOGY

Ammonia to noticeable mounts occurs at times in the urine of nearly all babies. Most of the cases occur in the winter months. The condition is almost confined to artificially fed infants, seen especially at the time of beginning solid food. According to the histories of a number of cases, the following diets were incidental to the ammonuria:

Cows milk with cereal  
Large quantities of bread  
Egg occasionally  
Orange juice  
High fat percentages in young infants  
Buttermilk, whole milk, condensed milk.

Most of the children were constipated; frequently stools were normal.

Giving alkali did not give relief and sometimes aggravated.

The following facts were found by Dr. Zahorsky in some extensive work on the subject with many babies. As a rule the concentration of ammonia in infants is not high, yet those with digestive disturbances show a higher percentage of ammonia nitrogen in the urine. The ammonia nitrogen in children is relatively higher than in infants. Sometimes high figures are obtained with no apparent cause. On examin-



ing children with the symptoms of ammonuria their urine contained no more ammonia—even though high—than in many children who had no symptoms. In general high ammonia content is found with a high specific gravity. Nearly all the children showed the ammonia nitrogen higher in the morning after the night's rest.

A few words on the ammonia mechanism may help at this point. Normal urine contains urea nitrogen to the extent of 85-90 per cent of the total nitrogen and a small amount of ammonia combined with hydrochloric, phosphoric and sulphuric acids amounting to 4-5 per cent of total nitrogen. The nitrogen of the body is derived from the proteins, which are broken down in the gastro-intestinal tract to form amino acids. These amino acids are absorbed from the small intestine and undergo deamination in the liver. The ammonia thus liberated is available for union with acid radicles. Ordinarily most of the ammonia is transformed into urea, and only a small amount unites with the acid radicles to form ammonium salts which are excreted in the urine. However, when acids are present in excess, either from ingestion of mineral acids or from abnormal production of acids in the body (as diacetic and oxybutyric in diabetes mellitus) ammonia combines with them and is so excreted, the urea of the urine being correspondingly decreased. This is a part of the body's mechanism of protection against acid intoxication. Ammonia salts are not, however, increased in all forms of acidosis—notably that of nephritis. In diabetes mellitus and other hyper productions of acid, the output of ammonia salts is an index of the degree of acidosis. Normally the ammonia in great part unites with weak carbonic acid to form ammonium carbonate, which is dehydrated to form urea. Thus according to Abt, there is a striking relationship between the urea and ammonia of urine. Marked increase of ammonia is reflected in a decrease of urea. Both are derived from the nitrogen of proteins. Depending on conditions, more or less nitrogen is excreted as urea or ammonia.

Keller was first to call attention to the increase of ammonia in severe gastro intestinal disorders of infants. Hereby the total amount as well as the ammonia coefficient was increased. Czerny and Keller found that diet exercised a

definite effect on the ammonia excretion and it was especially the fat which affected it. Folin found that the ammonia increased on low protein diet. In normal infants the ammonia coefficient rarely exceeds 10 per cent (Mayer). In two cases of fasting the ammonia coefficient rose from 3 per cent and 7.6 per cent the first day to 26 per cent and 25 per cent the third day respectively. Hoobler's experiments showed a definite ammonia increase on high fat feeding.

Recently Nash and Benedict, later verified by Loeb, Atchley and Benedict, have suggested that ammonia is manufactured by the renal cells themselves, in amounts which will depend on the blood reaction. In acidemia more is made and in alkalemia less. In any case the acids in the blood stand as the direct reason for increased ammonia in urine.

Another cause of ammonia in urine, outside the metabolic system, is bacterial decomposition of the urea in neglected cystitis, where the urine stands a while—especially that due to paralysis or obstruction—resulting in formation of ammonia. Ammonia is also increased in conditions in which the power to synthesize urea in the liver is interfered with. Inorganic acid ingestion will increase the ammonia of urine. The ammonia referred to means ammonium salts and not free ammonia.

Now we have seen that ammonia combined with acids is excreted to a more or less degree in nearly all infants' urine, yet it has been found that free ammonia, and not combined, causes the skin irritation in babies. No ammonia in its free state has been proven present in a child's urine. Dr. Zahorsky, on following up this clue, found that the immediate cause of the ammoniacal diaper is the presence of an alkali in the diaper or bedding. When the diaper is not thoroughly rinsed in clear water after being washed in strong alkaline soap, enough alkalinity remains in the cloth to decompose the ammonia in the urine. An alkaline stool mixed with the urine acts in the same way, causing the irritation to be blamed on the feces, when really caused by free ammonia. Thus it is also seen that a neutral urine can be the most dangerous, since highly acid urine would neutralize all the alkali in the cloth before the ammonium salts would decompose. This explains the failure

of dieting and the administration of alkalis. The treatment would be, first of all, strict attention to the washing of the diapers to be sure no alkali remains.

#### CONCLUSIONS

1. The severe irritation from babies' diapers is the result of free ammonia in these diapers.
2. The free ammonia does not occur as such in the urine but is derived from the ammonium compounds, and is released by alkali in the diaper; soap, lye, stool or lime.
3. The amount of combined ammonia in the urine depends on the amount of inorganic acid thrown into the blood.

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#### REPORT OF SPIDER BITE

By

H. L. SHAW, M.D.,  
 Sumter, S. C.

At 3:30 P. M. on Sunday afternoon May 17, 1936, I was called to see a young negro man, 20 years old, who gave the following history: "While in the privy which is located in the yard I was bitten and am suffering severely."

Upon examination I found evidence that he had been bitten on the scrotum. Four spiders were afterwards found (probably black widow), but only one bit him. He was suffering intense

pain in his legs, arms, abdomen and chest. The pains were cramp like, the muscles were hard and rigid. There seemed to be no let up in the contraction of the muscles. There was some difficulty in respiration. His pulse was the least bit slow, I did not count it accurately, however, it seemed slower than normal. It was with difficulty that the patient could be kept on the bed, he was suffering so intensely, begging that something be done for him and begging that he be rubbed. The pain seemed worse in the legs than elsewhere, particularly in the thighs.

As soon as possible I came back to my office, boiled up a syringe securing an ampule of 15 1-2 grains of calcium chloride, I returned and gave this intravenously. Before finishing the administration the patient remarked, "Doctor, I am better." I left him to return in two hours and a half and found him suffering if anything worse than before. I then gave him one half grain of morphine hypodermically. Two hours later I returned and gave him 20 cc of a 10 per cent solution of sulphate of magnesium in the gluteal muscle. This should have been given intravenously but I could not secure, either from the hospital or the drug store, the intravenous medication.

This was given at 9 P. M., I did not see the patient again until 11 o'clock the next morning. He had a good night's rest and I found him free from pain and apparently well again.

I got my authority for giving the magnesium in an article which was printed in May 18, 1935, issue of The Journal American Medical Association, said article was entitled, "Black Spider Bite" written by J. M. Frawley, M.D., and H. M. Ginsburg, M.D., Fresno, California.

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ABORTION, Spontaneous and Induced, Medical and Social Aspects. By Frederick J. Taussig, M.D., F.A.C.S., Professor of Clinical Obstetrics and Clinical Gynecology, Washington University School of Medicine, St. Louis. Illustrated. This Volume is one of a Series Dealing with Medical Aspects of Human Fertility, Sponsored by The National Committee on Maternal Health, Inc. St. Louis, The C. V. Mosby Company, 1935.

This volume is one of a series dealing with medical aspects of human fertility sponsored by the National Committee on Maternal Health, Inc. The author well says that abortion has become

a world problem. This means that it goes far beyond purely medical and surgical bounds. He has had unusual training for his investigation of the subject. This investigation has been exhaustive going back into the remote period of history. Not only does he discuss abortion in the human being but makes a study of abortion in animals. The illustrations are unusually good and they are numerous. The preventive side of the subject has been given careful consideration. The bibliography is extensive. Indeed this monograph is a classic.



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J. P. Townsend, M.D., F.A.C.S.-----Charleston, S. C.

##### *Dermatology and Syphilology*

J. Richard Allison, M.D.-----Columbia, S. C.

##### *Gastro-Enterology and Proctology*

W. T. Brockman, M.D.-----Greenville, S. C.

##### *Nervous and Mental Diseases*

E. L. Horger, M.D.---State Hospital, Columbia, S. C.

##### *Medical Reserve Corps*

Col. J. E. Daniel, Med. Res.-----Greenville, S. C.

##### *Public Health*

B. F. Wyman, M.D.-----Columbia, S. C.

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JUNE, 1936

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#### BACK TO THE PHARMACOPOEIA AND THE NATIONAL FORMULARY

The Journal is interested in promoting a larger use of the Official Pharmacopoeia, Number 11, just off the press and approved for adoption on June 1. The Journal has a similar interest in the new revised edition of the National Formulary published by the American Phar-

maceutical Association. Both of these books are reviewed in this issue of the Journal. We have conducted on our own account a survey in one of the smaller counties which appears to show that about fifty five per cent of prescriptions call for proprietaries and specialties. We have sought the cooperation of the School of Pharmacy of the Medical College of the State of South Carolina at Charleston and the School of Pharmacy of the University of South Carolina at Columbia. It gives us very keen pleasure to present herewith a brief summary of a recent survey conducted for us by the latter institution. A similar survey and summary will be presented in the next issue of the Journal as a result of a special investigation by the School of Pharmacy of the Medical College of the State of South Carolina. We have sought the interests of the component county medical societies. We hereby request the program committees to study some phase of this problem and to inaugurate an educational campaign amongst the membership. Great progress has come from the activities of many high class pharmaceutical manufacturers, and there are many so-called stock remedies of value, but the art of prescription writing should not become a lost art, as many believe to be imminent. It is gratifying that there is a wide spread effort now to consider seriously the whole problem. The American Medical Association has done much to this end by its various publications and particularly by the activities of the Bureau of Pharmacy and Chemistry. The American Association of Medical Colleges at its last meeting took up this subject and reported on a survey of the teaching now being carried on along these lines by their member institutions throughout the country. Fundamentally we shall probably have to depend largely for real progress on our teaching institutions, and it appears that they are going to do something about it. One of the recent outstanding exhibits was that of the Department of Pharmacy of the Medical Department of the University of Kansas at the meeting of the American Medical Association just held at Kansas City. This institution brought forward forcibly to the many thousands of physicians attending the convention the history of the development of the Pharmacopoeia and

the National Formulary and the many admirable features of the new revisions.

University of South Carolina,  
Columbia, S. C., June 4th, 1936.

To the Editor Journal South Carolina Medical Association:

In compliance with your request of February 13th, I wish to give you the results of our Prescription Survey here in Columbia.

This work was done by members of our Senior Class in Prescription Practice and was under the supervision of Professor W. D. Stother, a member of our teaching staff. A total of about eight thousand prescriptions was read and they were taken from the files of three drug stores located in different sections of the City of Columbia. This was done in order to get a more general representation of prescription writing in the city. I might also add that the total number of prescriptions read was exclusive of any refills and all were written during the calendar year of 1935. The following results were obtained:

NOTE: The percentages are calculated on the number of different items prescribed and also on the number of times each was dispensed.

In the tabulation of this data, the stores selected will be designated as Nos. I, II, III. Store No. I draws its business from what might be called all classes of people. No. II might be

considered a community type of store, while No. III is located in the down town section on Main Street.

Store	% of items U.S.P.	% of items N.F.	% of items Non-official
I	42.5	10	47.5
II	51.4	5.9	42.7
III	48.4	9	42.6
Average	47.5	8.3	44.2
Store	% times dispensed U.S.P.	% times dispensed N.F.	% times dispensed Non-official
I	67.8	3.8	28.4
II	63	6	31
III	70.9	9	22.2
Average	67.2	6.3	27.2

I am enclosing herewith a copy of the reprint of a Survey of somewhat similar nature made by Professor Strother in 1931, which I hope may be of interest.

Assuring you that it has been a pleasure for us to cooperate with you in this connection, and I sincerely hope that your effort to popularize the use of the U.S.P. and N.F. among the physicians of our state will be highly successful, I am,

Very sincerely yours,

E. T. Motley, Dean.

School of Pharmacy

## RESOLUTIONS ON THE DEATH OF DR. S. E. HARMON

### *In Memoriam*

Whereas, Doctor Samuel E. Harmon, beloved Surgeon and Physician, friend and counselor of our profession was taken from this world on December 28, 1935, and

Whereas, his cheerful, bright and useful life was a constant inspiration to all of our members, he being a kind and helpful friend, a broad and judicious counselor, and

Whereas, his untiring efforts and devotion to his profession endeared him to all who knew him, including many of our members and others who owe him a debt of gratitude for services of the highest skill which were rendered purely for his love of God and humanity, therefore be

it

Resolved: By the members of District No. 3 South Carolina Graduate Nurses' Association, in meeting assembled that we deeply regret the death of this eminent surgeon and our esteemed friend; that in his death our association has lost a true friend and a valuable adviser; that we extend our sincere sympathy to his family, and be it further

Resolved: That these resolutions be spread upon the minutes of the Association and a copy thereof be sent to his family.

Mrs. Frank George, R.N.

Miss Pauline Pearce, R.N.

Miss Pearl Leitzey, R.N.

Committee on Resolutions South  
Carolina Graduate Nurses Association  
District No. 3.



## SOUTH CAROLINIANA

J. I. WARING, M.D., CHARLESTON, S. C.

Some Observations on the Jameson Recession Operation for Strabismus. J. W. Jervey, Greenville—South. M. J. 29:520, May 1936. Jervey finds this operation the most desirable type, and reports 81 per cent successful results in a group of 21 cases.

A Tracheobronchial Suction Tube. W. B. McWhorter, Anderson—South. M. J. 28: 328, March 1936. Description of an instrument for removing secretions.

Atraumatic Removal of Needle from Hand under Fluoroscopic Control. W. H. Prioleau, Charleston—Ann. Surg. 103: 854, May 1936. An illustrated discussion of a technique for atraumatic removal of the needle.

Abnormal Growth from the Coccygeal Region of a Baby. W. P. Timmerman, Batesburg—South. Med. & Surg. 98: 199, April 1936. Case report of a large teratoma in caudal region of a newborn infant. Tumor removed, recovery uneventful. Pathological report listed at least nine types of tissue in the tumor.

Fate of Transplanted Cow's Horn. J. A. Siegling, Charleston, and J. J. Fahey—J. Bone & Joint Surg. 18: 439, April 1936. Results of animal experiment indicate that cow's horn is relatively non-absorbable and does not stimulate osteogenesis.

Observations on the Effect of Malaria on the Wassermann Reaction. R. Wilson, Jr. and S. L. Levin, Charleston—Am. J. M. Sc. 191: 696, May 1936. The authors reviewed 262 cases of malaria in Roper Hospital, and found that the Wassermann reaction was falsely positive (non-specific) in 6.3 per cent.

The Cold Pressor Test for Measuring the Reactibility of the Blood Pressure: Data Concerning 571 Normal and Hypertensive Subjects. E. A. Hines, Jr. and G. E. Brown, Rochester, Minn.—Am. Heart J. 11: 1, Jan. 1936. The technique of the test is discussed. The authors find that subjects with normal blood pressures fall into two groups, one with a normal response to the test, the other with an hyperactive response. The latter group is thought to furnish patients with essential hypertension, as indicated by observations on three cases watched through the several stages.

Hypertension —Cardiac Hypertrophy —Nephrosclerosis. F. E. Zemp, Columbia—South. Med. & Surg. 98: 202, April 1936. A complete discussion, including surgical treatment and considerable bibliography.

Studies on the Relation of Diet to Goiter. III. Further Observations on a Goitrogenic Diet. R. E. Remington and H. Levine, Charleston—J. Nutrition 11: 343, April 1936. Further experimental work with rats, in the search for an answer to the goiter problem.

## OBSTETRICS AND GYNECOLOGY

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J. D. GUESS, M.D., GREENVILLE, S. C.

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Continuation of Comments on Report of Committee on Maternal Welfare presented before the House of Delegates, April 21, 1936, by Dr. R. E. Seibels, Chairman, Columbia, S. C. The first installment was published in the May issue.

The role of inadequate prenatal care in increasing maternal mortality has already been referred to. Only 5 women who died had anything like adequate prenatal care. Two of these died from sepsis, one after forceps delivery because of prolonged labor, and one after classical cesarean section after two vaginal examinations. These deaths then resulted from errors of technique, and theoretically at least prenatal examination should have put the doctor on his guard with respect to expected difficulty, and this should have governed his care in examination during labor.

In 224 cases there was little or no prenatal care. There were only 9 deaths from toxemia of late pregnancy in the group who received even a little prenatal care, this being one-third of the entire group, while there were 93 deaths from this cause in the group receiving no prenatal care, being the cause of practically one half the deaths in the group. This seems to demonstrate that even slight prenatal observation is not a negligible factor in the prevention of toxemic deaths.

On the other hand, this does not seem to apply to prevention of sepsis. Slightly over one-third of the deaths of women who had inadequate prenatal care were due to sepsis, while slightly more than one-fifth of the deaths in the group receiving no prenatal care died of infection. Again one may ask, is it possible that since physicians probably attended more of the women who had some prenatal care, than did midwives, was this a factor in the greater incidence of death from sepsis in this group? There is no disposition to indict, but we physicians must search out our faults and attempt to eradicate them, before our accusations against midwives will be seriously listened to.

Thirteen deaths occurred from hemorrhage because of placenta previa, all in the group who received no prenatal care. Adequate care would have included instruction as to the danger of bleeding during pregnancy, and especially painless bleeding during the last trimester. However, in studying the method of delivery in these thirteen women, one is led to doubt how much such instruction would have reduced the mortality. Eleven of these women were delivered by physicians, and one by a midwife relieved by a physician. Cesarean section was done once, and version 8 times. Braxton-Hicks version after rupture of the membranes is an acceptable method of treatment and from the maternal standpoint a rather satisfactory type of treatment for placenta previa, and perhaps, is the best method for a patient who can not be transported to a hospital, but it presupposes no manual efforts at extraction, but instead the continued presence of the physician, during the completion of labor by the natural forces. Whether or not this was the procedure followed in these 8 fatal cases is not known. Nor do we know how the other four cases were handled, except that delivery was not operative.

Although it should be generally recognized that eclampsia is not a surgical disease and that an eclamptic is in no condition to withstand surgical procedures, and although the dictum, treat the eclampsia and disregard the pregnancy until the eclampsia is controlled, has been widely taught in clinics and in the medical press, still in one-fifth of the deaths from this disease, this course was not followed, and operative delivery was effected shortly after the doctor had seen the patient. Eight were delivered by forceps, and one must assume, whether or not correctly so, that cervical dilatation was complete; 5 were subjected to cesarean section, and in two a succession of methods were employed before delivery was accomplished. One must conclude that in South Carolina, eclampsia involves peculiar and terrific dangers.

At least sixty-six of the 224 women who died<sup>1</sup>



after reaching the last trimester of pregnancy had some type of operative delivery, an incidence of almost 30 per cent. Ten were delivered by cesarean section, six because of eclampsia and five of these died of the eclampsia, and three others who died of sepsis. Of the ten cases only three babies were salvaged. Sepsis after cesarean section should be rare, because section is almost always contraindicated after vaginal examination or manipulation, and when done in such cases transcervical section has been demonstrated to be safer. If a low section is not done and in all grossly contaminated cases hysterectomy should follow section. Section is justifiable in the case of a dead baby or one of questionable viability only in the rarest instances.

One-third of the fatal cases delivered by forceps died of sepsis. When will we learn that it is unsafe to invade the genital canal of a woman in labor, except with the greatest care as to asepsis? Over three times as many women died of sepsis after forceps delivery than died after version, and yet, two more women were delivered by version than by forceps. Can it be that the old forceps, carried around in the bag from case to case, were dirtier and less efficiently sterilized than the operator's hands? Pouring boiling water over forceps lying in a dish pan or soaking them in weak lysol solution is not an efficient means of sterilization.

The portrayal of fact and speculation has been frankly made, and yet, it is believed that in the main, it has been fairly done. Neither the facts nor the deductions made from them are pleasant for South Carolina doctors to contemplate, and they would be less pleasant to the intelligent layman. They seem to conclusively show that the cause of the high maternal mortality does not lie at the door of our so-called midwives. True, it is that the fault is not wholly with the profession. There are several aspects to the question.

Popular ignorance of the necessity of adequate prenatal care is important. Even if every doctor in the State were able and willing to give such care there would still be many, many women who would not avail themselves of this service.

Poverty is still another important non-medical factor. The profession has given of its time

and knowledge and of its money without hope or expectation of financial return in a way that is appalling. The burden has been heavy, and he who has given, has not been without his own economic problems. Nothing but praise can be rendered him for this service so generously given. But, if the service to pregnant women has been given in a careless, hurried manner, submerging the obstetrical conscience, disregarding cardinal principles, then were it not better that this service not have been given at all? Certain facts and surmises disclosed by a study of this report would seem to so indicate.

No doubt inadequate obstetrical training both in medical school and after graduation is an important factor in the dreary picture. One does not expect every practitioner to be a specialist in obstetrics. Nor does one expect that the obstetrical specialist shall have every maternity case referred to him. But the general practitioner should understand the cardinal principles of asepsis, the peculiar dangers in forcible delivery, the hazard of placenta previa and the role of anesthesia and surgery in the mortality from eclampsia. To know these things presupposes, perhaps, more obstetrical knowledge than has been acquired by many South Carolina physicians who still undertake to do maternity work.

What of the remedy? Medical care, paid for *en masse*, by the State would not solve the problem. It would not improve their obstetrical knowledge or lessen the hurry of the doctor. No doubt he would receive in many instances a larger fee per case, than now, where he frequently receives nothing, but the fee could not be commensurate with the demands of time and skill and would probably tend to lower the collectable fee for those cases not coming under the plan.

State medicine would not immediately remove the ignorance of the masses, nor the unwillingness to go to hospital for abnormal delivery.

On the other hand the profession can not carry unaided the burden of adequate obstetrical care to the indigent. The demand on time and other resources is too great. Perhaps, the best solution will come from a combination of State aid through the department of public

health, together with a stipend for the physician who is called to render service to the destitute, combined with better training and supervision of midwives.

Prenatal care is preventive medicine, and should be offered as freely to the destitute as any other type of preventive medical service. Public education as to its value is just as important as is the knowledge of the value of prophylactic inoculation. If one concedes that preventive or prophylactic medicine is a function the State should render to its destitute citizens, then one must concede that the State should include in that service prenatal care.

The demands upon the physician in attempting to care for all destitute women in labor are too great for him to undertake without financial aid. Even midwives, poorly trained and poorly supervised as they now are, have demonstrated their usefulness in caring for these patients. Their mortality rate, based on the ratio of all deaths with which they were associated, (including cases where they were relieved by

physicians) to all live births attended by them, is just half that of physicians based upon the ratio of deaths, attended solely by them to live births which they attended. Well trained and supervised midwives, aided by State supported prenatal clinics could be entrusted with the delivery of a greater proportion of destitute women, thus lightening the burden on physicians without affecting their incomes, and if they received a fee for attending abnormal or complicated cases, their income would really be increased, without an increase in their work.

For such a scheme to be practicable, each of the postulates would have to be true, namely, this service must be restricted to those unable to pay a physician for complete care, midwives must be better trained and carefully supervised, and physicians must be paid a fee to care for cases recognized as abnormal before falling into labor and for complicated cases to which they were called by attending midwives. Are the difficulties involved in solving the problem greater than the need for its solution?

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## BOOK REVIEWS

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THE NATIONAL FORMULARY, Sixth Edition, National Formulary VI, N.F. VI. Prepared by the Committee on National Formulary by Authority of the American Pharmaceutical Association. Published by the American Pharmaceutical Association, Washington, D. C., 1935.

The first edition of the National Formulary came off the press in 1888. We now have the Sixth Edition. This is the official volume of the American Pharmaceutical Association and like the Pharmacopoeia becomes official throughout the country on June 1. It is a companion volume to the Pharmacopoeia and deserves the same serious consideration as a practical guide to the profession. The formulary will issue supplements also and engage in extensive research work. The book should be available to the entire medical profession.

Philadelphia and London: W. B. Saunders Company, 1936. Cloth, \$10.00 net.

This is a volume of sixteen hundred and eight pages. The plan of the book is to include a large number of contributors representing many special fields in surgery. This is intended to provide texts of the very highest authorities. A tribute has been paid by the author to the late Dr. E. Starr Judd whose wise counsel aided materially in making the book worthwhile. It would appear that in the forty chapters practically the whole range of surgery has been covered. The contributors represent nearly every great University in the country and nearly all sections of the country. There are many creditable illustrations. The book is encyclopedic in scope yet all within one volume.

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A TEXTBOOK OF SURGERY, By American Authors. Edited by Frederick Christopher, B.S., M.D., F.A.C.S., Associate Professor of Surgery at Northwestern University Medical School; Chief Surgeon, Evanston (Illinois) Hospital. 1608 pages with 1349 illustrations on 730 figures. Phil-

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ALLERGY OF THE NOSE AND PARANASAL SINUSES, A Monograph on the Subject of Allergy as Related to Otolaryngology. By French K. Hansel, M.D., M.S., Assistant Professor of Clinical Otolaryngology, Washington University School of Medicine; Fellow of The Association For The Study of Allergy, The Association of Resident and Ex-Resident Physicians of the



Mayo Clinic, the American Laryngological, Rhinological and Otolological Society, and the American Academy of Ophthalmology and Otolaryngology. With fifty-eight text illustrations and three color plates. St. Louis, The C. V. Mosby Company, 1936.

This is the most extensive monograph on an ever widening field yet to come to the reviewers desk. It is a book of eight hundred and twenty pages. The illustrations are excellent.

**THE PHARMACOPOEIA OF THE UNITED STATES OF AMERICA**, Eleventh Decennial Revision, (U.S.P. XI). By authority of the United States Pharmacopoeial Convention held at Washington, D. C., May 13 and 14, 1930. Prepared by the Committee of Revision and Published by the Board of Trustees. Official from June 1, 1936. Agent: Mack Printing Company, Easton, Pa.

The average practitioner may not be seriously impressed by the importance of this new revision which is to become official on June 1, but that is no reason why a new conception may not be promoted about this great book. First of all the book is now well beyond one hundred years old as will be noted by the fact that the Medical Society of South Carolina in September 1818 in convention assembled approved of the plan for forming a National Pharmacopoeia and appointed delegates to further their wishes in the matter. It would be appear that the time has arrived for the institution of a campaign with the slogan. Back to the Pharmacopoeia. It is rare that the Pharmacopoeia as revised will not supply ample therapeutic resources. Then there is an important economic problem. Many of the specialties and proprietaries are invaluable but often they are expensive to the patient. Many surveys indicate that the trend is on the increase for physicians to prescribe these remedies rather than those of the Pharmacopoeia and the National Formulary. The new revision is going to be much more attractive to the profession than has hitherto been the case. Instead of waiting ten years to include new remedies and delete old ones annual supplements will be issued keeping the Pharmacopoeia up to date. Then there is another reason the research division is international the results of which will be included in these supplements. Every druggist should have a new copy and every doctor have access to one.

**CLINICAL HEART DISEASE**, By Samuel A. Levine, M.D., F.A.C.P., Assistant Professor of Medicine, Harvard Medical School; Senior Associate in Medicine, Peter Bent Brigham Hospital, Boston; Consultant Cardiologist, Newton Hospital; Physician, New England Baptist Hospital, Boston. 445 pages with 97 illustrations. Philadelphia and London: W. B. Saunders Company, 1936. Cloth, \$5.50 net.

This book has been written largely for the general practitioner and the author has presented many practical points for his guidance in the treatment of heart disease. The various mechanical aids of modern times have been clearly described but wisely subordinated to clinical experience and judgment.

**WANTED:** Place as office assistant in Doctor's office. Have had experience in meeting people in public offices; can do stenographic bookkeeping work. Write Faith Clayton, 1509 Lady Street, Columbia, So. Car.

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## THE 1935 RECORD

Received from members	\$708,026.00
Received from interest	45,155.00
Received from profits securities sold	835.00

Total Income	\$754,016.00
Sick and accident claims paid	535,062.00
Saved and invested	116,090.00

Total used for benefits \$651,142.00

*Of the total income from all sources,*

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**ASSETS Jan. 1st, 1936 . . . . \$1,348,578.00**

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# THE JOURNAL

of the

## South Carolina Medical Association

VOLUME XXXII

July, 1936

NUMBER 7

### VESICULAR ERUPTIONS OF HANDS

By

JOHN M. VAN DE ERVE, M.D.,  
Charleston, S. C.

Vesicular eruptions of the hands are often recurrent and resistant to treatment. They are common and present a problem faced frequently by every physician.

The etiological conceptions have followed the swing of the research pendulum. At first ascribed to food, later to nerves, then to foci of infection, they are now ascribed, in the opinion of most dermatologists, to fungous infections. We feel that there are many causes other than fungi.

The eruption of pompholyx (dyshidrosis, trichophytid, etc.) is usually characteristic, exhibiting deep-seated sago-grain vesicles, rather deeply embedded, occurring along the sides of the fingers and in the palms of the hands, usually being symmetrical. The vesicles resulting from local external irritation or those of eczema are more superficial, tend more to attack the dorsum of the hands, break much more easily, with crusting and oozing, and are more diffuse. There is considerable burning and itching, before the outbreak and after, and the eruption usually renders the skin sensitive to such mild irritants as soap and water.

In considering the etiology, we must ask ourselves these questions: Why is it that fungous infection causes a vesicular eruption that is confined only to hands and feet? What explains a dermatophytosis producing a vesicular dermatitis in certain persons and not in others, or in the same person at different times? If an external irritant explains a case, why are not

other regions involved where the skin is certainly more sensitive? What is the explanation of the symmetry of the eruption?

We believe that there are two major factors concerned. Certainly, internal conditions influence the condition. Apparently, the neuro-circulatory-endocrine balance of the patient, the general status of the body and its environmental balance, play a determining part in the eruption. There are many cases where no precipitating or trigger mechanism is to be found by present methods of study. Cases are reported as being caused apparently by nothing more than an emotional storm. Yet many people are subjected to just as severe emotional stress and do not develop the condition. For the present, then, we can only postulate a vague predisposition in some way brought about by the general condition of the patient and its effect on the local tissue.

The second major factor is that of the precipitating or trigger mechanism. It has been shown in different cases that food (oranges, e. g. Wise) may be the cause, in others that bacterial foci in teeth and elsewhere are operative, and that foci of fungous infection, particularly on the feet, are causative. It is known, and accepted, that external irritation may produce direct vesicular eruptions of any portion of the exposed skin. Strong acids, alkalis, ultraviolet exposures, and extremes of temperature may at times cause vesiculation. Lesser concentrations of irritants acting on the sensitized skin of the hands may produce the vesicular phase of eczema. The direct infestation of the local tissue by fungi, parasites such as scabies, bacteria in impetigo, may produce vesicles by causing acute inflammation.

The response of the skin to the various irritants and toxins is somewhat similar. We con-

Read before the South Carolina Medical Association, Greenville, S. C., April 23, 1936.



sider here only the vesicular response. The irritant, acting from without, or within, causes a local vascular dilatation with an outpouring of serum into the skin. Forcing its way outward between the cells of the prickle-cell layer, a condition of spongy edema is set up, which soon becomes so marked that the cells are forced aside, the horny layer is lifted up as a roof, and the vesicle formed. In case of external irritants, the vesicles are more superficial and more easily ruptured. When the cause is internal, the vesicles are more deeply-seated and less easily ruptured.

When confronted with a vesicular eruption of the hands, the major diagnostic studies to be made are:

#### 1. HISTORY:

1. Onset: sudden, gradual, its relation to
  - Seasons
  - Meals, foods
  - Emotional stress or strain
  - Physical activity
  - Exposure to external irritants
    - Chemicals
    - Plants
    - Industrial
2. Recurrences—possible causes as above
3. Associated symptoms
4. Detailed questioning by systems for foci:
  - Gastro-intestinal:
    - Gastritis
    - Colitis
    - Intestinal dysfunction
  - Circulatory
  - Eye, ear, nose, throat, sinuses, teeth, tonsils
  - Genito-urinary
    - Menstrual abnormalities
    - Cervical infection
    - Prostatic infection
    - Bladder and kidney infection
  - Neuro-muscular
    - Excessive activity and tension
    - Fungous infections of the feet
5. Response to previous treatment.

#### 2. PHYSICAL EXAMINATION:

1. Maxim—"In eruptions of the hands, look at the feet."
2. Complete physical examination, covering all possible foci in addition to regular procedures.

3. Study feet carefully for vesicles, scaling between toes, and changes in nails.

#### 4. Hands—

Vesicles, type, superficial or deep, easily ruptured or not, distribution palmar or dorsal.

#### 3. LABORATORY:

1. Remove vesicle roof from feet and hands, soften with 15 per cent potassium hydroxide, and examine with microscope for fungi.
2. In obscure cases:
  - Patch tests for external irritants and sensitivity.
  - Scratch tests for food and epidermal sensitivity.
  - Trichophyten sensitivity tests.
  - X-ray for foci of infection, sinuses, teeth, et al.

The incidence varies. Dermatophytids and dyshidrosis of obscure origin are common on hands, dermatitis venenata (external irritant dermatitis) and direct local dermatomycosis are less common.

#### 4. TREATMENT:

##### 1. Specific:

1. Remove irritant or focus of infection if found.
2. If fungous infection—trichophyten extracts may be used but are still rather unreliable.
3. If due to poison ivy—injections of the extract intra-muscularly are of great value.

##### 2. Non-specific:

1. Local: (for acuteness to chronicity in order named)
  1. Wet dressings of 1-4000 potassium permanganate solution or 1-15 aluminum subacetate solution.
  2. Antiseptic pastes.
  3. Ointments containing sulphur, salicylic acid, ammoniated mercury, or tar.
  4. Avoidance of soap and water. If rubber gloves are advised, cotton gloves must always be worn underneath to prevent maceration.
  5. Soothing creams to protect skin from dirt and moisture.
  6. X-ray only when indicated.

## 2. General:

1. Nutritious diet, properly balanced for minerals, bulk, and vitamins, eliminating any suspicious food elements, particularly those indicated by scratch tests.
2. Calcium administration.
3. Fowler's solution or small doses of strychnine.

While there are some cases that prove recalcitrant and stubborn, the majority of the vesicular eruptions on the hands respond favorably to intelligent care.

## DISCUSSION

Dr. J. H. Crooks, Greenville:

Dr. van de Erve has brought to us one of the most difficult phases, I think, of cutaneous medicine. All of you, I know, have from time to time treated these conditions and found how much trouble they really are, how often they recur in spite of every effort you put forth for proper treatment. You also have found that you can overtreat them, and one of the most difficult things for us to do is to keep our treatment at the minimum strength. Any of these conditions will respond, not always quickly but usually readily, if you will give them some soothing treatment and not use something like salicylic acid, which spreads the eruption.

Oftentimes we do not find the cause of these conditions. Oftentimes we know that the patient has worked with something in his occupation which causes the eruption, but we can not find the causative factor. Often these patients, if you put them in a hospital, if they are bad enough, for a week, or keep them at home, will be improved, only to relapse when they return to work. Many of them are due to fungus infections—*Monilia*, *Trichophyton*, etc.

I had a case in a druggist and could not find what the cause was, so I had to go about making a history for him. I took him away from his work, and he improved. When he went back to work the eruption returned. I finally found that his eruption was due to chloral hydrate. He was making up solutions of chloral hydrate.

Sometimes we find cases in school teachers due to chalk. In housewives we sometimes find the eruptions due to cleaning solutions or preparations, strong soaps, insect powders, etc. I have had more cases among textile employees than any other class except housewives. One textile employee was a painter, and

I found his eruption was due to Sonoco spirits, which was used as a thinner. I had the whole crew of painters changed back to turpentine as a thinner, and the patient's eruption cleared up. In office workers, in the case of a stenographer, we proved that her eruption was due to ink from her typewriter ribbon. In farmers we have found it due to spraying solution—the arsenic in the spray. One patient we had happens to live in the eastern part of the state, where the season is early—where bulbs blossom early. In her case the juice of jonquil stalks happened to be the cause.

Among beauticians, I suspect the cause to be some of the solutions they handle. One woman was positive to Lux soap, permanent-wave solution, hair dye, and various other things. When she first came to me she had no eruption on her face but had it on her hands. We took her away from her work for a time and cleared it up, but when she went back to work some time later she had the eruption on her face as well as on the hands.

I have had one case in a mortician, who was susceptible to embalming fluid. There have been several cases among physicians in whom we have not been able to prove to what they were susceptible, except one who was susceptible to novocain.

In many cases I really suspect bacterial infection, and any patient who has an eruption on his hands or anywhere else and has a focus of infection should have the focus of infection removed.

We found one patient who was very sensitive to chicken. If she stayed off chicken for two weeks or a month she would get well, but if she would go back to eating chicken she would have a recurrence.

We have had several cases among gasoline handlers, especially those handling the red (ethyl) gasoline.

The greatest percentage of cases has been in housewives—about thirty per cent. A housewife, of course, is subjected to so many irritants that it is very hard to find which one is at fault.

One patient was a dry cleaner and used what is called dry-cleaning solvent. His response was good while he was away from that solution.

Chipman has classified similar eruptions to these Dr. van de Erve has mentioned as dermatophytoses and dermatophytids. He also speaks of recurrent eczematoid eruptions and seborrheic dermatitis, which is often taken for dermatophytid.

In closing, I wish to express my appreciation to Dr. van de Erve for bringing up this subject, and to urge you not to make light of these affections but to treat them very thoroughly, because sometimes these people have to stay away from their work for two or three months at a time, and it is a very important matter to them.



THE QUESTION OF DRAINAGE IN  
ABDOMINAL SURGERY

By

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Nothing in surgery is more firmly established than is the value of drainage in pyogenic infections. In these conditions our first thought is the securing of adequate drainage, whether it be in the brain abscess, in a sinus, or a soft tissue abscess, an empyema, a bone infection, or elsewhere. The rapid fall in temperature, the relief from pain, and the general improvement in the patient when free drainage is secured, are all so well known as to require no further mention here.

Therefore, when we come to consider the question of drainage in abdominal surgery, where we face infections caused by the same organisms, our answer must embrace two chief issues, namely: first; *can* we drain the peritoneal cavity?; and, second; will our efforts to drain do the patient more harm than good? Our answers to these two questions will determine our attitude toward the subject under discussion, and may vitally influence the welfare of our surgical patients.

In this paper, I have endeavoured to maintain an open mind, and to state as nearly as I can both sides of the question. In order to do this, I have analyzed expressions of opinion from 41 surgeons, giving us what I believe is a fair cross-section of surgical opinion in America, Europe, and Australia.

Let us for a moment consider the peritoneum. The peritoneum is a closed sac forming a covering not only for the abdominal walls, but also for the contained viscera. Until a few years ago the peritoneum was considered as an absorbing membrane only, and perhaps too much stress was laid upon the danger of absorption of toxins in peritonitis. We have now learned that the function of the peritoneum as a secreting membrane, pouring out an exudate in the face of infection, is of vital importance in the presence of infection. The exuded serum and lymph, rich in germ destroying phagocytes is one of Nature's chief defenses in this region. From

this exudate are formed the dense walls of fibrin that may either be valuable in walling off infected areas, or, on the other hand, may cause troublesome adhesions, perhaps even leading to intestinal obstruction.

As in other things both surgical and medical, the pendulum of opinion concerning drainage of the abdomen has swung back and forth, with valiant and enthusiastic champions pulling from each side. The campaign in recent years against drainage is nothing new. In 1885 Mickulicz successfully treated a case of perforated small intestine without drainage. So at least for 51 years surgeons have had this questions to fuss about.

Let us now consider some of the arguments against drainage of the peritoneal cavity. One of the first things that brought condemnation to abdominal drainage was the practice of multiple drains, the drains not only in the upper and lower ends of the incision, and in the middle, but also stab drains at the same time, and perhaps on both sides of the abdomen, giving the patient a porcupine appearance. This has, I believe, been practically discarded. Naturally, it led to many hernias, also to post-operative ileus and obstruction. The healing process was delayed, and the cost of hospitalization greatly increased.

The experimental work done on dogs by three Chicago investigators has caused considerable adverse criticism of drainage in the abdomen. These men, Drs. Buchbinder, Droegemueller, and Heilman, tried to simulate in the dog the conditions found in the human abdomen in the presence of intestinal perforation, such as we have in ruptured appendix and gun-shot wound cases. They isolated open loops of lower ileum, making end to end anastomosis of the other free ends of the ileum. They reported upon 3 series. In the first group, including 31 dogs, the abdomen was closed and no further operation was done. The mortality was 90.3 per cent. In the second group, consisting of 33 dogs, the abdomens were opened after 24 hours, the open loop of ileum removed, and the abdomen closed without drainage. The object here was to determine what benefit, if any, would be derived from simply removing the focus of infection. The mortality here was only 58 per cent. In the third series, including

20 dogs, the loop was removed in 24 hours, the wound being drained with 2 glove rubber drains, 5 centimeters in width, one running across the old loop area and into the pelvis, and the other across the same area and up into the upper abdominal area. The mortality in this series was 100 per cent. There are 2 outstanding objections to this experiment being a convincing argument against drainage in the human abdomen. The first is that the drains were run across the focus of infection area into the lower and upper abdomen, thereby carrying infection to other areas. The second objection is that no surgeon, so far as known, has had any such mortality rate following the use of drains in the human being. These authors mention what they call the "Inconsistency between the well known experimental observations of numerous workers and clinical conceptions and treatment of this disease," namely, profuse peritonitis, and they believe it due to 3 factors: 1st., there is still a difference of opinion as to the duration of the effectiveness of drain; 2nd., the idea is still prevalent that some types of drains are more effective than others; and, 3rd., the operator's conception of the type and extent of the peritonitis with which he is dealing is often erroneous. They claim that the character of the exudate has no bearing on effectiveness of the drain. This does not agree with Hertzler and other observers who claim that the more fluid the exudate, the longer drainage will continue. The three authors state further that in rapidly spreading diffuse peritonitis drains of any kind are not only useless, but increase the degree of contamination and the rapidity of spread in the territory beyond the zone of involvement. Although they use this as an argument against drainage, still they stress the great difficulty in differentiating between a local and a general peritonitis, saying that a large abscess is frequently mistaken for a general peritonitis. They state that a drain does not extraperitonealize a zone already the site of a spreading infection. They quote Yates who found that after 6 hours carmine injected at the ensiform cartilage of a dog could not be drained through drains in the peritoneal cavity. Yates said that drainage of the peritoneum is impossible, and that drainage of the peritoneal fluid is depleting, and, third, that you cannot drain away pus and blood.

Dr. Ross Grosshart, of Tulsa, Oklahoma, does not drain. He pours ether in the abdomen after removing the focus of infection so far as possible, and closes the wound tightly. He reports 6 per cent mortality. He claims that the gonococci and colon bacilli, being aerobic, will not multiply well in a closed cavity, and that the aerobic streptococci kills the patient anyway whether drained or not. He claims that ether is a non-irritating antiseptic, and dissolves the capsules of bacteria, lowering their vitality until phagocytical action is established.

Dr. W. Dennis Kendig, of Kenbridge, Va., points out that drains may cause secondary infection, fistulas and hernias, favor ileus, and prolong convalescence. However, he favors drainage under certain circumstances, as we mention elsewhere in this article.

Dr. Alfred J. Trinca, of Australia, considers the question of drainage still a matter of contention, but says that advocates of non-drainage are gradually gaining adherents. He had a mortality of 2.46 per cent in a series of 244 cases of diffuse peritonitis treated without drainage. He considers the use of a drain in the majority of cases of peritonitis as not only futile and unnecessary, but possibly productive of great harm. But, although stating that more cases are being treated without drainage, he says that no appreciable decrease in mortality in appendicitis has been attained in the past 20 years. This author considers the peritoneal exudate in pus cases as a protective leucocytic and serological barrier, and its removal by drainage not only unnecessary but harmful. Then, in the next breath, he somewhat weakens his argument against drainage by stating, "The only fluid which escapes from the tube whilst it is in position is that which entered it during the process of insertion, or that which makes its way at the side of the tube." As evil effects of drains he enumerates the following:—Aggravation of existing peritonitis by the tube, but says that the increased exudate usually remains localized; fecal fistula; damage to omentum; damage to abdominal wall; post-operative hernia; adhesions and obstruction; introduction of organisms from the air; ileus; and delayed and painful convalescence.

S. Row, a British surgeon, does not advocate peritoneal drainage, but he drains the muscle



layers, as he found wound infection troublesome.

Drs. D. A. Willis and J. M. Mora, of Chicago, claim that "Drainage has no effect on the mortality rate." They find the temperature normal several days earlier if undrained, and hospitalization distinctly shortened. They report but one death in a series of 100 cases of acute suppurative appendicitis.

Having dwelt to some extent upon the arguments used against drainage, we will now consider the other side of the debate as presented by those who favor drainage of the peritoneal cavity.

One of the staunchest advocates of peritoneal drainage is Dr. Robert C. Coffey, of Portland, Oregon. His eminence as a surgeon, which has been augmented by his authorship of the well known operations for bilateral transplantation of the ureters and for radical removal of carcinoma of the rectum, commands attention. He uses the Coffey-Mikulicz drain, an improvement on the old Mikulicz drain, and has named it the "Quarantine Drain." The author states that serious abdominal infection may be cured spontaneously by Nature. Nature, he says, first tries to absorb and eject the offending substances. Her next step is to try to wall off the infection with a barrier, or so-called quarantine. Therefore, Coffey considers that the surgeon must, so far as possible, imitate Nature by first removing the focus of infection, and then strive to protect the healthy tissues by walling them off from the focus area. Mikulicz used an open sac of gauze placed between the free peritoneal cavity and the diseased area, the sac being then tightly packed with a gauze strip. The chief objections to this drain were that the large area of gauze caused too free an extravasation of peritoneal fluid, and that the small piece of gauze coming out of the external wound gave insufficient drainage, and was soon clogged. Also, when the drain was removed, it left a large raw surface that sometimes caused serious hemorrhage, or led to re-infection. These were some of the things that led Clark, of Philadelphia, and Yates, of Milwaukee, to their experiments to prove that drainage should be largely abandoned. Dr. Joseph Price, of Philadelphia, was fond of using the Mikulicz drain, and secured results that were outstanding in

that period of surgery. The Coffey quarantine drain substitutes for the Mikulicz gauze sac a sheet, or two or three sheets, of soft, smooth rubber tissue. And for the single long piece of gauze packing a number of gauze wicks are substituted. These wicks, usually ten or twelve in number, are narrow and straight. They are carefully placed in the wound where they will afford the maximum of drainage from the focus of infection. Then a layer of the rubber sheeting is carefully arranged around the bundle of gauze wicks. Then one or more strips of the rubber tissue are placed above the first. This forms a sort of compound cigarette drain. The drain is the same size at the point of exit from the abdominal wound as it is at the bottom of the wound. This, the author claims, is a vital factor in giving adequate drainage. The abdominal wall is drawn rather loosely around this drain. The wicks are removed one at a time one week after operation, and one week later the rubber packing is removed. Coffey claims that this drain is ideal both as a drain and as a quarantine to protect the healthy tissues from the focus of infection. After using this drain for 25 years in various forms of abdominal infection, Coffey says:—"I believe it to be the most important agency that has entered into my surgical practice, whether considered from the standpoint of saving life or reducing morbidity. *It embodies the most fundamental principle connected with abdominal surgery.*"

Buchbinder, Droegemueller, and Heilman, whose experimental work on dogs was described heretofore in this article, state that "One cannot question the necessity for drainage in local peritonitis." They say that the immobility of peritoneal viscera forming the cavity walls prevent encapsulation of the drains.

Dr. J. F. Baldwin, of Columbus, Ohio, reports the successful removal of 6 feet of jejunum, using a cigarette drain in the wound.

Dr. Virgil S. Counseller, in the October, 1935 issue of Surgical Clinics of North America (The Mayo Clinic Number), says "I believe it is a good thing always to put in a drain (in cholecystectomy) because one cannot always tell when the tie on the cystic duct will let go." He claims that the drain does not predispose to post-operative hernia, and it allows the surgeon to discover bile leakage.

Dr. Byron B. Davis, of Omaha, Neb., drains some cases but not the average cholecystectomy case.

Dr. Charles R. Davis, of Detroit, reports 951 cases in which 229 were drained. His mortality in all cases, drained and undrained included, was 3.36 p.c. He had no fecal fistulas. He noticed that muscles once separated by drains do not close tightly quickly after removal of drains. He removes the tube drains on either the day after operation or the following day, and cigarette drains one day later than tube drains. He favors the insertion of a tube drain to the pelvis, and also a cigarette drain to the abscess cavity, or to the site of the appendix. He quotes John B. Deaver as advising not to remove drains until they fall out of the wound of themselves, and similar advice from F. C. Warnshuis. Others advise removal a little at a time, each day.

Dr. Arthur C. Henthorn, of St. Johns, Mich., agrees with Lawson Tait who advised "When in doubt, drain." He says that when the tract is well organized it forms a tract of least resistance for fluids of the infected cavity. He claims that the only real contraindication to drainage is in cases of gastric and intestinal anastomosis.

Dr. W. Dennis Kendig, of Kenbridge, Va., claims 3 advantages for drainage of the abdomen, as follows:—1. The establishment of a sinus down to one small area. 2. The protection of walling off adhesions. 3. The relief of abdominal pressure. He advises drainage when we have, or expect, any of the following:—Necrotic tissue, or a localized focus of infection; intra-abdominal pressure; exposed extra-peritoneal, or oozing spaces; or intra-abdominal abscesses. He quotes La Hay as saying that a drain, in order to be effective, must be within 1 or 2 inches of the point of origin of the infection, one exception being the presence of considerable abdominal pressure. The pressure is supposed to aid drainage by preventing early formation of impervious adhesions. Kendig calls the attention to the fact that such expressions as "When in doubt, do not drain," and the reverse, acknowledge doubt in the mind of the speaker. He favors the suction apparatus in removal of fluid from the abdominal cavity, it being less apt to cause injury to the tissues. He

says that Wilensky's and Berg's claim that the advisability for or against drainage can be determined at the time by a hasty examination of smears is open to question because it is hard to estimate the virulence of the infection or the resistance of the patient.

Dr. F. D. Kennedy, of Norton, Kansas, continues to drain in certain cases. He says that a drain in the presence of infection is deleterious to peritoneal resistance and should be introduced only to exclude more malign influences. He states that peritoneal drainage must be local, and unless there is something to be gained by rendering an area extra-peritoneal, or by making from such an area a safe path of least resistance leading outside the body, there is, aside from hemostasis, no justification for its use. He believes it is better to put in drainage in the hope that even a few hours of drainage will benefit. He closes by saying that he thinks he will continue to drain free pus cases "more because I think I will sleep better for it than because it is really necessary."

Dr. Edmund H. Mensing, of Milwaukee, calls attention to the fact that most cases of peritonitis start in the pelvis, even those that result from perforating lesions higher up. This can be used as an argument for pelvic drainage.

Drs. Mentzer and Woolsey, of San Francisco, drain only about 30 per cent of cholecystectomies.

Dr. Herbert M. Miller, of Providence, R. I., reports 934 appendectomies with 248 drained cases.

Dr. Alfred J. Trinca, of Australia, already quoted under the discussion against drainage, considers drainage necessary under the following circumstances: First, where the infective focus has not been eradicated; second, in the presence of free fecoliths; third, where we have raw areas; and, fourth, in appendiceal abscesses.

Dr. Owen H. Wangenstein, of Minneapolis, considers drainage in cholecystectomies imperative.

Dr. W. M. Weeden, of New York, uses a Gibson-Mikulicz drain. He reports its use in 455 out of 860 drainage cases. This drain is in the form of a cornucopia made of rubber dam, apex inserted downward, the tip having been removed and one or two holes cut in the side. After removal of the focus of infection



as nearly as possible, the drain is inserted and spread out so as to press against the walls of the cavity. It is then tightly packed with strips of gauze. When he removes the drain on the 3rd. or 4th. day, to use his exact words, it leaves, in the average adult, "a cavity the size of 2 fists surrounded by omentum and loops of intestines." This appears to the average surgeon to be very radical abdominal drainage! The author claims that the temperature and pulse drop almost immediately, and that improvement seems miraculous. In his report on 1588 cases of acute appendicitis, drained and un-drained, he gives a mortality of 4.9 per cent. However, the Gibson-Mikulicz drain gave 14 per cent of hernias, which is not surprising, considering the size of the opening left by the drain.

Drs. D. A. Willis and J. M. Mora, of Chicago, advise drainage where there has been, in later cases, denudation of the tissues, and where fecal contamination has occurred. They found the abdominal incision far more apt to be infected than the peritoneal cavity, and were surprised to learn that they had wound infections in 50 per cent of their undrained cases of ruptured appendix.

Dr. Hustinx advises drainage only where the appendix cannot be entirely removed.

Dr. E. T. Crosson believes in enough drainage material where drainage is indicated.

Dr. H. K. Tuttle reviews 3285 cases, and feels safer with small rubber drains introduced down to the appendix area whenever there is evidence of peritoneal involvement.

Dr. H. Glasscock reports 108 drainage cases, and considers drainage indicated if the appendix has perforated.

Dr. Muller considers drainage of only local importance.

Dr. F. W. Bancroft prefers drainage, but had 15 per cent post-operative hernias.

Drs. Quain and Waldschmidt use drains for about 2 days in acute suppurative cases, and 12 days in gangrenous cases.

Dr. R. M. Harbin reports 818 cases of appendicitis, and prefers drainage when the least bit doubtful, saying that, although it increases morbidity, it decreases mortality. He found that the drained cases required .6 per cent secondary operations and the undrained .4 per cent.

By a study of the opinions of these various

surgeons we see that the question of drainage in abdominal surgery is still a live issue. Personally, I believe that in this, as in most other questions, the highway of safety lies midway between the two extremes. We must neither travel with those who put multiple drains throughout the abdomen, and drain without due consideration of indications, nor must we lock arms with those who are so antagonistic to drainage that they close all abdomens without regard to the conditions found.

As stated at the beginning of this article, we must consider two main points; first whether or not we can drain the abdomen, and, second, whether or not our efforts at drainage will do more harm than good. I believe that it has been firmly established that we can drain at least a part of the abdomen. It seems reasonable to believe that drainage, even for a few hours, may be of such benefit to the patient as to spell the difference between recovery and death. I have been struck with the fact that if a wound shows fair drainage after 24 hours the patient has a far better chance of recovery than if the wound has a dry appearance. I have not noticed any special stress laid upon this in the literature. To me it is hard to believe that the very profuse discharge of pus following drainage of the general peritonitis case is entirely from a very small area.

So far as my personal experience goes, and judging from what I have read, the dangers of drainage, as to morbidity and mortality, have been exaggerated by those who are against drainage. The insertion of a soft rubber tube, of rather large caliber, with fenestrations, does not seem to cause any definite harm if removed within a reasonable time. I believe in removing the drain after 24 hours unless there is some indication for leaving it longer. I feel sure that its benefits will far outweigh any possible dangers. Adhesions are apt to form in the abdomen in such cases, and, in fact, in clean cases, whether or not they are drained. As to fecal fistulas, I cannot remember a single case that could in any way be attributed to a drain. Nor have I ever seen a troublesome hemorrhage caused by a drain.

In conclusion, I will say that unless more definite evidence is shown against drainage, I cannot conscientiously cast aside the only means

at our command to aid Nature in one of her chief measures of defense against infections, namely, drainage.

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## SOME OF THE FATAL ACCIDENTS INCIDENTAL TO PREGNANCY

By

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The more serious accidents occurring in pregnancy or during labor are hemorrhage, eclampsia and infection. Of the 25,000 gravidæ who die annually in the United States, 4000 succumb to hemorrhage, 5000 die from eclampsia and 6000 are the victims of infection. That a large percentage of these fatalities is preventable is the profound conviction of those who have studied this tragic situation. Practically nothing is done to prevent this needless human sacrifice because neither the schools, the profession, nor the public hold the obstetrician and his art in very high esteem, and the care of the pregnant woman is relegated to the young and inexperienced practitioner or, that anachronism of modern medicine, the American midwife.

If the profession will appreciate the pathologic potentialities of obstetrics, and the public pay the child-bearing woman the respect she deserves, prenatal care will take its proper place in preventive medicine, and the midwife pass into the category of economic monstrosities.

There is little doubt that death from hemorrhage, eclampsia, and infection is largely preventable and the responsibility for the present high mortality rate can, in almost every instance, be placed on the obstetrical attendant.

Death from hemorrhage occurs in placenta previa, premature separation of the normally implanted placenta, or abruptio placentæ, and postpartum hemorrhage. The incidence of placenta previa is fairly high, the figures given by various authors vary from 1 in 1500 to 1 in 200. It is ten times as frequent in the multi-

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para as in the primipara—and increases with age and multiparity. The mortality in various series of statistics ranges from 1 to 19 per cent for mothers and 10 to 80 per cent for the babies. The diagnosis of placenta previa is not difficult; given a woman in the last three months of pregnancy with a painless uterine hemorrhage, the recognition of placental tissue over the internal os on vaginal examination leaves no doubt as to the condition present.

You are all familiar with the treatment of this condition and I will only refer to some of the important features for the sake of emphasis and the value of the different methods. The primary object of treatment is to save the woman's life and, if possible, that of the infant.

In marginal placenta previa, hemorrhage usually occurs at the end of the first stage of labor, when rupture of the membranes is usually sufficient. This allows the placenta to retract with the uterus, and the head entering the lower uterine segment produces sufficient pressure to aid in stopping the hemorrhage. When the cervix is fully dilated, the labor should be terminated by forceps or version and immediate extraction.

We now have three methods of treatment—Braxton-Hicks' version, metreuryesis, and cesarean section. For a complete description and discussion of these methods I refer you to any modern textbook on obstetrics, and I will only discuss them from the stand point of their practical application and relative value. If the patient has lost much blood, the baby is dead or nearly so, or very premature, Braxton-Hicks' version is preferable, safe, and easy of performance. It is only necessary to bring down one foot with sufficient traction to make the infant's thigh compress the placenta against the cervix to control the hemorrhage. Then let nature complete the job. Under no circumstances follow the version by extraction until the cervix is fully dilated.

Metreuryesis was introduced by Maurer and Dührssen in 1887, because of the high infant mortality of Braxton-Hicks' version. Any of the various inelastic rubber balloons on the market may be used. The great advantage of the bag over Braxton-Hicks' version is the reduction in infant mortality. Where the condition of the mother and child is good, when little

blood has been lost, and the child is viable, the results following this method of treatment have justified its application in suitable cases.

Cesarean section in cases of central and partial placenta previa has, in recent years, gained a popularity which is fully justified by the results obtained. In favorable cases cesarean section has a general mortality of 4 per cent; in favorable cases of placenta previa the same rate should be possible and, in addition the infant mortality can be reduced to 5 per cent. In partial and central placenta previa, with the mother in good condition and a living and viable child, there is a positive indication for cesarean section.

With an incidence of 1 in 245 cases and a death rate as high as 50 per cent for the women and 95 per cent for the babies, abruptio placentae is one of the greatest accidents with which we have to deal. In striking contrast to placenta previa, abruptio placentae is a premature separation of the more or less normally implanted placenta. It usually appears later in pregnancy, at or near term; the onset is stormy, and pain precedes or accompanies the appearance of hemorrhage; the abdomen is tender, and the uterus is tense and board-like. The causes are toxemia of pregnancy, chronic nephritis, diseases of the endometrium and, rarely, traumatism. Toxemia is present in from 56.6 to 91.3 per cent of cases.

The treatment is similar to that of placenta previa, except that the indication for prompt evacuation of the uterus is urgent, because complete control of the hemorrhage is not possible before the uterus is empty.

Death from postpartum hemorrhage is rare today. There are 1100 postpartum deaths from hemorrhage reported in this country annually. The more frequent causes of severe or fatal postpartum hemorrhage are laceration of the cervix extending to or beyond the internal os, usually the result of breech extraction or forceps delivery through an incompletely dilated cervix; lacerations of the clitoris or the vaginal bulbs may cause fatal hemorrhage; atony following prolonged labor, or over distention from twins, or polyhydramnios, placenta previa, and abruptio placentae. The treatment is better to anticipate its possibility and prevent its occur-

rence by early correction of the causes of this calamity.

Mauriceau said: "Pregnancy is a disease of nine months duration." The truth of this is evidenced by the minor disturbances of the early months of gestation and the more serious ones of later pregnancy, the most important of which is the toxemia of pregnancy. This usually begins in the last trimester, first evidenced by hypertension and albuminuria and finally, if untreated, culminating in eclampsia.

I do not propose to go into a discussion of the subject except in its relation to the title of my paper. You are sufficiently familiar with the evolution of toxemia to its dramatic climax, eclampsia. Its mortality varies from 5.31 per cent to 45.7 per cent for the mother, and from 3.62 per cent to 42 per cent for the child. Of its causes we know practically nothing; with its tragic termination we are sadly familiar. Our treatment of eclampsia is handicapped by incomplete results, though the convulsions may be controlled, and the hypertension and albuminuria improved, unless the pregnancy is terminated the toxemia persists, and it is only a matter of time when the eclampsia recurs.

Puerperal infection may be defined as a genital infection of the parturient just before, during, or immediately after delivery. In the majority of cases the source of the infection is the attendant, whether physician or midwife. The causes incidental to puerperal infection are faulty technic in the conduct of labor. If the same meticulous care and attention to detail was practised in the delivery-room as in the modern operating room, puerperal infection in obstetrics would be as rare as wound infection in surgery is today.

These accidents of gestation can in a great measure be prevented. With proper prenatal care and periodic examinations of the gravida, edema, rise in blood-pressure, albuminuria, disturbances of vision, headache, and neuralgias, hyperacidity, substernal and epigastric pain, slight vaginal bleeding with or without uterine pain, are unmistakable warnings of impending trouble while there is yet time for palliative treatment, or at least to terminate the pregnancy before the patient's life is sacrificed to inaction and the good intentions with which Hell is paved.

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#### PROGRAM

Fifth District Medical Society, Winnsboro, S. C., Fairfield Inn, 11 A.M., Tuesday, May 26, 1936

Invocation, Rev. G. G. Mayes.

Address of Welcome, Hon. W. A. Robinson, Mayor of Winnsboro.

Subject: Unannounced, Dr. W. P. Beckmon, Columbia, S. C., Director Mental Hygiene Clinic South Carolina State Hospital.

Subject: "Infantile Paralysis," Dr. R. M. Pollitzer, Greenville, S. C., Formerly Professor Pediatrics, Medical College State of South Carolina.

Subject: "Some Fatal Accidents of Pregnancy," Dr. H. W. deSaussure, Charleston, S. C., Associate Professor Gynecology, Medical College State of South Carolina.

Subject: "Management of Fractures From Standpoint of General Practitioner," Dr. Austin T. Moore, Columbia, S. C.

Subject: "Otitis Media—Some of its Complications," Case Report, Dr. Roderick Macdonald, Rock Hill, S. C.

Lunch.

Business Meeting.

Election of Officers.

Adjournment.



# THE JOURNAL

## OF THE

### South Carolina Medical Association

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Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent.

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JULY, 1936

#### THE TEACHING OF PHARMACOLOGY AND MATERIA MEDICA IN THE MEDICAL SCHOOL

In our editorial last month we stressed the importance of the new revision of the United States Pharmacopoeia and the National Formulary both of which became official June 1. We mentioned the tendency on the part of many physicians to lose interest in these official guides

in the practice of medicine and to resort to the use of proprietaries and specialties. Surveys have been made in many parts of the country including our own state to determine approximately the percentage of prescriptions by the average physicians of these various ingredients. The latest surveys in South Carolina have been made by the Journal and on request by the School of Pharmacy of the University at Columbia and the School of Pharmacy at the Medical College Charleston.

The teaching of Pharmacology, Materia Medica and prescription writing at our State Medical School appears to be on a high plane and very practical. The principles of prescription writing are first taught and from then on each member of the class is required to write two prescriptions daily for the drugs studied the day before. These are corrected and returned. The black board is used quite frequently and the whole class is given a chance to criticize the prescription written. The prescription book used in this course contains a number of typical prescriptions and they are required to re-write them in abbreviated Latin. Great stress is placed on the U. S. P., the N. F. and the N. N. R. preparations. The drugs and preparations are displayed and examined by the student, and not only is the action or pharmacodynamics stressed, but he must know how to order the drug or preparations, or combination of same.

We feel that the whole subject is well handled at our State Medical School under the guidance of the Dean and his Faculty. Dr. W. H. Zeigler, the Dean of the School of Pharmacy has conducted a survey of prescriptions in a number of the leading drug-stores in Charleston and reports the percentages other than U. S. P. and N. F. preparations as follows:

40%

42%

33%

55%

40%

35%

50%

45%

8) 340% = 42 1/2 % Total

The survey in Charleston compares quite fav-

orably with that in some other centers, in fact, appears to be much better. Fundamentally the Medical School can do much about the whole proposition and will do so but organized medicine is in position to supplement this effort to a great degree and we believe it a profound duty to undertake it.

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#### PIEDMONT POST GRADUATE CLINICAL ASSEMBLY

The plans have been made for the second annual post graduate course at the Anderson County Hospital, September 8, 9, 10. Every effort will be made to provide three days of practical instruction for the general practitioner.

The faculty consists of well known teachers in southern medical schools. The Southeastern Surgical Congress through its South Carolina section will put on a surgical program for one day in cooperation with the Assembly. The attendance last year was well above one hundred and it is expected that there will be a great increase this year over this figure. Efforts will be made to interest the physicians in the nearby states as well as the entire profession of South Carolina. The time selected should be an important factor in promoting a large attendance. The vacation period will have ended then and the extreme heat of summer no longer a dominate factor as a rule.

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#### MEDICAL SOCIETY OF SOUTH CAROLINA

Minutes of the Regular Meeting of the Medical Society of South Carolina, held Tuesday evening, March 24th, 1936, at 8:30 o'clock, at Roper Hospital

The meeting was called to order by the President, Dr. W. Atmar Smith.

Present were: Drs. A. E. Baker, Ball, Beckman, Bowen, Bowers, Burn, Cain, Cannon, Chamberlain, Evatt, Finger, Heidt, Hope, Hoshall, Johnson, Lynch, McCrady, McInnes, Maguire, Martin, Mazyck, O'Driscoll, F. L. Parker, Peery, Prentiss, W. H. Price, Prioleau, W. M. Rhett, Richards, Rudisill, Rutledge, Sams, Scharlock, Scott, J. E. Smith, W. A. Smith, W. H. S. Speissegger, Sughrue, Taft, E. W. Townsend, J. F. Townsend, J. M. Van de Erve, Waring, I. R. Wilson, Robert Wilson, Robert Wilson, Jr.

Guests were: Dr. R. C. Bruce, Greenville; Dr. E. A. Hines, Seneca; Dr. Paul D. White, Boston; Dr. J. A. Shields, Richmond, Dr. Ross, Drs. Zeigler, Kinard, Cardwell, Foster, Martin; R. E. Stoops, E. U. Reed, R. Malcolm, R. W. Wimberly, R. R. Leamer, T. Q. Harbour.

The Minutes of the previous meeting were read and confirmed.

A letter from Dr. L. F. Elston, requesting readmission to the Society was read and referred to the Board of Censors. The Secretary was instructed to obtain any necessary in-

formation from the American Medical Association.

A letter from the American Medical Association concerning the distinction between Members and Fellows was received as information.

The President called attention to Chapter V, Section 2, of the By-Laws of the Society concerning the payment of dues.

The Scientific Program was then taken up.

Dr. R. C. Bruce, President of the State Medical Association, was introduced by Dr. Smith. He expressed his pleasure in visiting the Society, and then read an interesting paper on "The State Medical Association."

Dr. E. A. Hines, Secretary of the State Medical Association, after being presented by Dr. Smith, made some complimentary remarks concerning the President. He then made a talk on "The New Pharmacopoeia and Simplified Therapeutics for Every Doctor."

This was discussed by Dr. W. H. Zeigler.

Dr. Cannon then presented to the Society Dr. Paul D. White, of the Massachusetts General Hospital, Boston, who made a talk on "Diseases of the Heart Muscle."

This was discussed by Drs. Cannon, Lynch, R. Wilson, and W. A. Smith. Dr. White replied to the discussion.

The President thanked the several speakers for their talks.

The meeting then adjourned.

Respectfully submitted,

J. I. Waring, M.D.,

Secretary.



## EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

### TONSILS AND ADENOIDS

Dr. I. W. Voorhees, *The Eye, Ear, Nose and Throat Monthly*, June, 1936

Recently, in the morning mail, came a letter which seems fairly to represent what is in the mind of every parent concerning removal of tonsils and adenoids, but which seldom becomes so articulate:

"Dear Doctor:

Our pediatricist, Dr. Blank, referred us to you for the removal of Junior's tonsils, etc.—At examination two days ago, you told my wife that an operation was imperative. Before going ahead with it, I have a few questions to ask. I wish to know the dangers, the probable result, the cost, the hospital arrangements, nursing needs and whether the mother can remain with the child over night. I believe tonsils were put there for a purpose and should be left alone. Don't they die from this operation sometimes? A friend of mine had a tonsillectomy done on his child some months ago (not by you) and the boy had a hemorrhage and a terrible time generally. The father states that after all this, the tonsils are still present. How can this be? I shall await your kind reply.

Yours truly,

JOHN SMITH."

Mr. Smith's letter is of vital concern to parent, surgeon and child. Therefore his letter was answered at length.

(Reply)

Anxious Parent:

I am the surgeon who is to be entrusted with arrangements for the operation on your only son, and with his after-care until well. You could have found a hundred like me within shooting distance of your office. I say this in order that you may not consider me boastful or as one seeking self-aggrandizement. I am trying, merely, to answer your queries.

You feel, of course, a deep anxiety. This is human. I have felt just as you do under like circumstances. But, if the anxiety is yours, the responsibility is wholly mine. This precious son when going down into the valley of un-

consciousness, puts his life entirely in my hands. Whatever happens to him during the two weeks from operation to dismissal will be "up to" me. I shall receive the blame for any untoward happening no matter whether it be under my control or not. In other words I am expected to have 100 per cent success. As a surgeon, I have sworn to do all that is humanly possible for those in need of my services, come what may. The only real satisfaction I get out of my profession is to see ailing people get well. If I fail in this case to accomplish what you and I both expect, then I am defeated, and all my training and experience have gone for naught insofar as this patient is concerned. Perhaps you think that your son is only "just another case";—that I do not feel the flesh-and-blood quality of my task;—that I am like an artisan working on a length of pipe or a block of wood.—This is true only insofar as the technical part of the job is concerned; for while I am at work, there must be present no emotional or other disturbing element. But when all is over and the tension of the operating room is relieved, you may see the light of joy not only in a surgeon's face but in the faces of all who have aided and assisted him in the highly important task. Every one of my colleagues everywhere can tell you that there is no surgeon living who does not take his responsibilities to bed with him. While walking in the street or riding in a car or ascending in an elevator, if the surgeon has a very ill patient under his care, he is turning over in his mind various plans for relief of pain, and for completely successful healing.

To you of the public, a surgeon is one who cuts mortal flesh with a knife, and if you are ignorant of his work or do not like him, he is merely a "butcher," the unkindest epithet that can be applied to one who goes about trying to do good. There are many untoward events which may militate against harmonious healing. That is why no physician can every "guarantee" a cure. Perfection no more exists in medicine than in millinery or mining. Fortunately, most incidents which disturb the orderly procedure

in an operating room are trivial, but occasionally they are serious, or even fatal.

I venture to say that a death on the operating table is one of the most shocking and unforgettable experiences in professional life, and more to be dreaded than corporal punishment or public disgrace.

But to get on with the story. You know nothing of my qualifications, and so I must tell you that all surgeons in these days are obliged to go through a prolonged period of training and experience. Years of work in clinics, watching master hands as well as using your own. "Labors of love" done in the name of "sweet charity" have brought a dividend of added experience and greater assurance in attacking surgical problems.

Now, your boy is a mouth breather. This means that he does not breathe through his nose as he should, and when he lies down at night, dust-laden and germ-laden air is inhaled into his lungs, causing a dry throat, coughing and bronchial attacks. Moreover, a lack of proper oxygenation in the lungs, makes for mental dullness, no matter how bright a boy may be by nature.

But, let us suppose that you are going to turn your back on the diagnosis and refuse to believe what both your own physician and I tell you. Then, let us say that out of a clear sky your boy comes home one day walking a little lame. You think he is shamming, but he says his leg hurts him. Well, he has been playing basket-ball at school a great deal, and maybe that accounts for it. When called in, your doctor finds a rapid heart which he thinks is somewhat enlarged. There is a low grade fever of 101 degrees F. The boy has not been eating well for a week, preceding which he complained once or twice about sore throat. An X-ray examination of the leg and chest is made. The leg shows nothing, but the heart is about one-third larger than normal. To bed the boy goes, not for a day or two, but for five long, weary months with a nurse in attendance and an ice bag on the cardiac region for two hours out of every four while awake. There is definite evidence of rheumatic fever. Every consultant who comes in puts his finger, so to speak, directly upon the tonsils as the site of origin of the infection, which is no longer limited to that region only. The scene of action is now centered in the heart. It is inadvis-

able to remove the tonsils, but even if they were removed during the acute cardiac attack, which is a dangerous procedure, the disease is no longer in the tonsils only, and no operation now will be effective in saving the heart.

This is no mere hypothetical case. Many a little patient has gone through just such an experience and has come out of it with permanent damage to his heart. This means that during his whole life he will never again be allowed to play basketball or tennis or foot-ball or do track running. Life insurance companies will turn him down or if they insure him at all, it will be at a very high premium rate. Here is a "cardiac cripple" who might have been saved from lifelong invalidism.

You claim, like many others, that the tonsils "were put there for some good purpose." Very true, but we are not quite sure of the purpose. After they have taken up and resisted all of the germs they can fight against, they cease to be effective agents of defense and become instead a machine gun "nest" which must be cleaned out if the battle in other sectors is to be fought successfully.

Hemorrhage may and does occur. It cannot be entirely prevented. But with well-trained assistants bleeding is stopped at the table, and the patient is kept there until the operative field is "dry." To be sure, it may recur during the first 24 hours, which explains why the patient must be kept in hospital where the house staff is constantly on duty to care for just such emergencies. After 24 hours, the likelihood of hemorrhage is so minimal that it is safe to allow the patient to go home.

Like many other people, I note that you "hate" the idea of sending anybody to a hospital. This prejudice is not well founded for, if you are really ill, a hospital is the only place where you have the advantage of X-ray, laboratory tests and special technical procedures such as blood transfusion. However, I do agree with you that too many people are sent to a hospital for minor illnesses which could be well taken care of at home. Surgery, whether major or minor, is much more conveniently done in hospital, but mothers sometimes object to hospital rules which prevent their staying with the child over night. But if every mother were allowed to do this, there would soon be as many



adults as children, and this would disturb the smooth working of hospital routine.

You tell me about a friend of yours who said that he had "gone through this thing" with his boy and that he is still a mouth breather. Recurrences do take place in the experience of the very best surgeons, but not ordinarily.

Your friend says that his boy is still a mouth breather. That may be due to habit or to some disease of the nose which can be corrected. Involuntary urination, especially at night, is also common. And so you see that the matter is not so simple as it seems.

The common idea is that almost anyone can remove tonsils and adenoids is true only in a sense, but there are some among us who lack surgical sense.

And now we come to the point you raised which many of us on both sides of the fence, physicians and patients alike, would prefer not to discuss. Many surgeons are so averse to "talking money" that they employ secretaries to fix the fee. The fee can always be arranged to the patient's satisfaction.

It is better, as a rule, to have a child operated upon preceding a vacation period.

## WOMAN'S AUXILIARY

### SOUTH CAROLINA MEDICAL ASSOCIATION

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### ANNUAL REPORT OF THE PRESIDENT OF THE AUXILIARY TO THE SOUTH CAROLINA MEDICAL ASSOCIATION, APRIL 22, 1936

By Mrs. Clarence E. Owens, Columbia, S. C.

Your State President submits her annual report with mingled emotions of gratitude for the remarkable cooperation with which her efforts have been supported, with gratefulness for the loyalty and understanding accorded her by the members of the South Carolina Auxiliary, each one of whom she is desirous of believing is her

friend; with pride that really constructive progress has been made and with joy in her heart that she has been privileged to serve as your President and afforded opportunity to develop a keener understanding of the aims and problems of the Auxiliary and establishing to her own satisfaction an assurance of its value to the Medical Association.

That all of the emotions are justified you have learned from the splendid reports of your State Officers and county Presidents which recounted the fine type of work being done in South Carolina, therefore, it remains for your President to present an account of her personal activities in the administration of your affairs during the past year.

At the Fall Executive Board Meeting, held in Columbia, the President stated her inability to conduct the duties of her office at that time and urged that she be relieved. A canvass in succession was made of the state officers with the outcome that no one was available who would consent to meet the emergency. To avoid confusion and the possibility of another silent year, the Executive Board permitted the President to begin her duties on the first of January with the promise that by concentrated action she would try to accomplish as much in four months as would ordinarily have been prolonged in leisurely fashion over seven. In consequence, the first of 1936 found her earnestly at work with the Corresponding Secretary contacting county presidents.

To them was outlined the major objectives of the year which were the promoting of health education, expansion within each unit as well as within the state, doubling of the Student Loan Fund, and organizing each Auxiliary along lines corresponding to those of the state. Detailed information as to the duties of each chairman was sent with a request for their names. Some of these returns were late coming in, but the results were very gratifying, especially in view of the fact that some memberships are so small as to necessitate each one holding two and sometimes three positions. With the information available each national chairman under whom South Carolina has serving a State Chairman was furnished the name of the latter, the names of the county chairmen and assurances of good wishes and support from our state. A few quotations will suffice to show how well these letters were received. In the News Letter published under the supervision of Mrs. J. P. Simons, Chicago, National Chairman of press and publicity whose husband she proudly asserts is a grandson of Dr. Simons of Charleston, appeared the following:

"The President and members of the Board of the South Carolina Auxiliary have shown a spirit of friendly co-operation toward all the work of the National Auxiliary. In a recent letter the President said: 'Rest assured that you have the best wishes of the South Carolina Auxiliary and the promise of personal co-operation with any project you wish advanced'."

From Mrs. David S. Long, Harrisonville, Mo., National Chairman of Public Relations, "I received your gracious letter of January 22nd, and I appreciate the fine friendship expressed from South Carolina, etc."

From Mrs. S. C. Red, Houston, Texas: "Many thanks for your promptness and for South Carolina's splendid cooperation."

From Mrs. V. E. Holcombe, Charleston, W. Va., National Chairman of Health and Program, who also boasts lineage in South Carolina have come numerous friendly letters of appreciation for the support of her program. Last and best have been those communications from Mrs. J. Bonar White which imbued your President with a longing to secure her attendance as our guest speaker even though *our* gain has been Georgia's loss. The administration presents

her presence at this convention as one of its main accomplishments. An excerpt from the News Letter expresses our sentiments:

"It would be a privilege and an inspiration to Auxiliary members, to attend the Annual Auxiliary Meeting which will be held at Greenville, S. C. April 21-23. Mrs. J. Bonar White, first Vice-President and Chairman of Organization of the National Auxiliary, will be the guest speaker. The Press Chairman suggests that all Auxiliary members read Mrs. White's article on Auxiliary Organization which will appear in an early issue of the BULLETIN of the AMERICAN MEDICAL ASSOCIATION."

In January to the National and Southern Presidents were sent greetings and assurances of support followed in March by invitations to attend this convention. It is regretted that neither could accept. Programs were sent to them, to the president of the American Medical Association and to all previously contacted national chairmen and many letters of commendation have been received in return.

As an expression of favor to South Carolina your President was extended the chairmanship of the Budget Committee of the Southern Auxiliary but could not serve. The same data which was sent to national chairmen was supplied to state chairmen with a promise of willingness to assist in any manner necessary and with an assurance of confidence in their ability to execute the duties of their offices.

Following an offer to visit any county units where service could be rendered your President spoke on organization before the Ridge Auxiliary, assembled at the home of Mrs. Price Timmerman in Batesburg and found the unit completely organized and functioning actively. An invitation from Mrs. P. M. Temples took her to Spartanburg for its January meeting and an effort which she hopes was successful was made to stimulate interest. Regular attendance has been possible at the Columbia meetings. It is regretted that an invitation to speak on the subject of Flower Arrangement for the benefit of the Student Loan Fund under the auspices of the Sumter Auxiliary could not be accepted and that a necessary trip to Greenville several days prior to its April meeting prohibited a return visit in response to an invitation to attend



the April meeting from the President, Mrs. T. R. W. Wilson.

However, two trips were made to Greenville, the first to attend the Student Loan Fund committee meeting and the second as the guest of Mrs. Wilson for a conference with her and the Convention Chairman, Mrs. J. L. Sanders, to discuss plans for this convention.

As a marked step of progression and one of its outstanding achievements, the administration cites the formation of a new set of rules, necessitated by five years of growth, to govern the use of the Student Loan Fund and a second set to govern the committee controlling the fund. Conducting the duties of the committee will be greatly facilitated by the adoption of these rules. The Fund at the close of the convention at Florence, April 18, 1935, after four years, amounted to \$569.45. Following our slogan "Double the Student Loan Fund" on this date, April 22, 1936, it has grown in 1 year to \$1083.93. Assisting your chairman of organization, your President went to Newberry, twice organized, twice disbanded, in an effort to interest them again, but failed to furnish sufficient incentive. She went also to Abbeville, delayed in organization while a futile attempt was being made to form a unit in nearby Greenwood in hope of contacting both towns during the same trip, thereby saving time and expense. Your president made desperate personal efforts to hold Anderson and Florence, but was unsuccessful.

A report of the year's work of South Carolina was compiled and forwarded some months ago to the Southern Auxiliary and the one accounting to the National Auxiliary will be sent immediately following this convention. An earlier report would not have given due credit for work done in the state.

The southern section of the News Letter sent out by the National contained an account of interesting work being done in the state. The request for the article came while your state chairman of Press and Publicity, Mrs. Clay Doyle, was in Florida, so it was the pleasure of your President to edit the news items and submit them for publication.

She compiled your programs for this convention. There are some errors, some omissions,

hers and the printer's. For these she asks your pardon.

Too much value cannot be placed upon the benefits derived from the space allowed us in the South Carolina Journal by Dr. E. A. Hines, our tried and true friend. The necessity for its full use whenever it is available is evident to all who read the Journal. The President and the Executive Board extend to him sincere thanks for space in the November, January, February, March and April issues and for his continued interest in the affairs of our organization. When the beautiful Sims Memorial was vandalized during the past winter, it was he who brought the matter to the attention of your President who in turn communicated with Mrs. H. M. Stuckey, the Sims Memorial Chairman, with the result that Mr. Alex Salley, the State Historian and your President presented petitions to the Finance Committee of the State Legislature for funds sufficient to cover restoration. A letter from the Clerk of the Committee assured the appropriation in so much as the memorial was presented to the state and is now its property.

It may be of interest for you to know that a close study of conditions in other states which compose the National Auxiliary reveals that South Carolina compares favorably with the large majority. The units and members number about the same as in other states of like size. The programs cover similar territory, the same problems which confront us, confront many others and nearly all have some form of philanthropic interests similar to our Loan Fund.

Since coming to Greenville the pre-convention meeting of the Executive Board has been held and the President's recommendations have been covered by those brought to you and voted upon by the House of Delegates. For your information the following statistics are presented:

1935—Twelve units, one of which, Anderson, was entirely inactive except for the payment of dues for ten members.

The Coastal and Florence Auxiliaries were organized. There were 225 members in the state. Charleston disbanded.

1936—Anderson and Florence have definitely disbanded.

Abbeville has been added so that there

are now eleven units in healthy condition in the state. In support of our Membership Campaign there has been a substantial increase in the units already established totaling 255 or a net gain of 50 members.

Since January 1st, your President has tried to the best of her ability to fulfill the promise for concentrated action made to the Executive Board and any failure to do so has not arisen from an unwillingness to serve. Bear in mind that there are no minutes prior to 1931 to be found, so securing information has been very difficult. If she has measured up to your expectations she will descend from office a very happy person and if she has failed, please be lenient.

To those who have helped make this report possible, go heartfelt thanks. For the Greenville Auxiliary which has supplied a glorious setting for the close of the administration, there is only commendation of the highest order.

And now, will you permit a lapse of speech into a more personal form while I acknowledge

with humility and deepest gratitude which brings a lump to my throat the whole-hearted support and many courtesies accorded me by my associates—the members of the Auxiliary to the Columbia Medical Society. For the enthusiastic manner in which they supported my ambition,—by a contribution of \$250 to the Loan Fund and a membership drive, resulting in an increase of 19 members, a 100 per cent rating, with the exception of four eligibles—I thank you. For the lovely luncheon at which they entertained the Executive Board after its November meeting—I thank them; the gift of our beautiful convention programs presented in compliment to me touches the innermost recesses of my soul. Could any symbol of friendship make a recipient more humble?

And so, feeling that only the surface has been scratched, I bid you fare-well as President of the Medical Auxiliary of South Carolina, for 1935 and 1936. May an all-kind Providence watch over you until we meet again and direct you along the benevolent way which you are following.

### AUTO OXYGEN TENT

To the Editor:

An idea occurred to me the other day and I have thought I would pass it along. Oxygen tents are rather expensive. A better and cheaper one can be had so easily. I think any one can pick up an old automobile body almost anywhere and convert same into a neat little house with little or no expense. Hospitals can sooner or later secure the body of some costly machine and "so"—as Dr. Ochsner used to say have a room though smaller than the patient's at home yet much neater and I believe much superior to the tents which cost money. The oxygen and the oxygen appliances are all that will cost the hospital and patient real money. The old automobile body treated now and then to a coat of paint will live certainly as long as the home and hospital judged by the old fellows we see as a constant eye sore along the highways.

G. P. Neal, M.D.

Greenwood, S. C.

**WANTED:** Place as office assistant in Doctor's office. Have had experience in meeting people in public offices; can do stenobookkeeping work. Write Faith Clayton, 1509 Lady Street, Columbia, So. Car.

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PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE  
STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

November 1, 1935

ABSTRACT NO. 299 (26087)

*Service of Dr. W. A. Smith*

Student J. Gaston (reading):

A 21-year-old negro male, laborer, admitted 4-14-35, died 4-15-35.

History (apparently gotten with difficulty): "Rheumatism" in 1928. Pain and oppression first appeared in chest and stomach 6 months before admission, and has continued. Has had swelling of lower extremities and dyspnoea, unable to elicit duration. Recently discharged from CCC camp because of "heart trouble." past personal history and family history appear irrelevant. Questionable history of lues. Diet adequate.

Examination: Temp. 97, pulse 108, resp. 40, B. P. not obtainable. Of good general stature and fairly comfortable. Pupils pinpoint and do not react to light. Tongue coated, few teeth carious. Tonsils slightly injected, not enlarged. Thorax: Expansion greater on right side. Breath sounds exaggerated in right chest, few rales in right chest posteriorly. Also exaggerated in upper portion of left chest, flatness in apex. Breath sounds diminished in lower left chest, dullness posteriorly on left. Heart: "Markedly enlarged." Systolic murmur at apex. Hear rate rapid, action weak. Abdomen: Distended and tender. Liver margin 4 inches below costal border. "Mass in upper left abdominal quadrant." Dullness in flanks. No edema of extremities. Neurological apparently normal.

Laboratory: Urine—no specimen obtained. Blood (4-15-35): Hb. 103 (D); RBC 5,610,000; WBC 18,000; polys 86 per cent, lymphs 10 per cent, monos 4 per cent. Urea N (4-15-35) 19 mgs. Blood Kolmer and Kline: 4 plus, 3 plus. Culture of fluid from left chest (4-15): negative, both on routine media and for t. b. X-ray of chest (4-15-35): See chart.

Course: Temp. rose to 101.2 one hour after admission, then gradually fell to 96.5. just before death. Pulse rate varied from 95 to 120,

each reading recorded with a question mark. Resp. 40, 30, 24, 26, 32. Two other examiners unable to get B. P. Patient ceased to breathe during a subsequent examination. On attempting to inject adrenalin into the heart, purulent fluid was aspirated. Pronounced dead at 12:25 P.M., 4-15-35.

Dr. Robert Wilson (conducting): Mr. Bernstein, will you size up the situation for us?

Student Bernstein: One of the first things noted in this case is the history of rheumatic fever in 1928, and the subsequent appearance of cardiac symptoms. The effect of rheumatic fever upon the heart is well known. On examination the heart was found to be enlarged, but the later note on the abstract of aspiration leads me to believe that there was fluid in the pericardial sac, and that the cardiac enlargement was of pericardial type. The chest findings are probably the result of pulmonary compression by the enlarged pericardial sac. I would interpret the failure to get a blood pressure reading as indicative of myocardial failure. The flatness in the apex makes me suspect a pneumonia there at the time of admission to the hospital. The mass in the upper left abdominal quadrant may be the margin of the liver pressed downward by the pericardial effusion.

The laboratory findings do not help us much. In fact the history is also of little help except for the record of rheumatism. The patient was probably too sick for a complete history to be taken, and he died so soon after admission that a complete work-up could not be done. My impression is that he had a pancarditis of rheumatic origin, and that death was from myocardial failure and from a pneumonia.

Dr. Wilson: The way this abstract is presented leaves some doubt in my mind as to whether the "rheumatism" was actual rheumatic fever. But tell us more about the "rheumatic heart." And how do you explain the pinpoint pupils?

Student Bernstein: His cardiac findings, with a valvular murmur, suggest that he had a

lesion of the mitral valve, and that would probably be of rheumatic origin. The only evidence we have of involvement of the myocardium is the fact that the myocardium was failing. The pericarditis appears to have been a purulent effusion. That would be unusual in rheumatic fever, but I believe that it was also rheumatic.

I do not believe that the pin-point pupils need be correlated with the clinical picture. The probability is that he was given morphine for the relief of pain.

Dr. Wilson: Let's see if anyone agrees with you. Mr. Glenn?

Student Glenn: His history of rheumatic fever seems to me to be fairly clear. And cardiac decompensation in a man of this age might well be on the basis of rheumatic disease of the heart. The note about the aspiration of purulent fluid from the heart leads me to believe that he also had a purulent effusion in his pericardial sac. The pain and the oppression in the chest can easily be explained on that basis. I believe that he also had a pneumonia.

In the laboratory findings, the high hemoglobin and red cell count can be explained on the basis of a failing heart. The leukocytosis can be explained on the basis of the pneumonia or the purulent pericarditis. He was not in the hospital long enough for his temperature curve to be highly significant, but it seems to suggest a severe infection.

Dr. Wilson: Why do you assume a pneumonia?

Student Glenn: The breath sounds were exaggerated on the right, suggesting that there was some loss of functioning tissue in the left lung. The diminished breath sounds, dullness and rales there suggest consolidation. The flatness at the apex is quite hard to explain. Of course the same findings may go with pleural effusion or with atelectasis. As an afterthought, the history of lues, the substernal oppression and pain, the altered pupils and the chest findings could all be explained on the basis of an aneurysm of the aorta, with compression-atelectasis of the lung. I think that pericarditis is a much more likely diagnosis, however.

Dr. Wilson: Mr. Wallace, will you discuss the case?

Student Wallace: I agree with what has been

said with regard to the chronic heart disease, probably on a rheumatic basis. But a purulent pericarditis is certainly not to be expected in rheumatic fever. A much more common cause of purulent pericarditis is the pneumococcus, extending to the heart from the lung and pleura. While there is nothing in the history to suggest a pneumonia, still there is nothing to make it seem unlikely. As the pericardial fluid increased rapidly in amount it would tend to prevent the heart from filling during diastole, the effect described as "cardiac tamponade," and death would result from circulatory failure. The inability to get a blood pressure reading means that there was no pulse pressure; this would be expected when tamponade became extreme.

I would like to see the x-ray of his chest.

Dr. Wilson: Will you interpret the film for the rest of us?

Student Wallace: The heart is definitely enlarged and appears bottle-shaped. This tends to confirm the impression of pericardial fluid. There is some hazy clouding of the left apex which might well have been pneumonia.

Dr. Wilson: In Dr. Rudisill's interpretation, as recorded on the chart, he says that the enlargement of the left side of the heart is very suggestive of pericardial fluid, but that the right border of the heart shadow is not as characteristic. He seems rather inclined toward that diagnosis, however.

There are several things about this case that must be considered. While the history is certainly inadequate, there is definite evidence of heart disease. In the face of an inadequate and unsatisfactory history, the examination must be particularly careful. The chest findings suggest pleural effusion rather than pulmonary consolidation. The enlargement of the heart shadow suggests pericardial fluid, and the aspiration further corroborates that. It is conceivable that the aspirated fluid came from the pleural cavity; in fact that was the opinion of the interne who aspirated the fluid, and the "chest fluid" recorded on the chart is the one obtained on aspiration. If we decide that pleural and pericardial fluid were present, the background for these two must be considered. The appearance of the fluid is described as "purulent." Rheumatic fever, which could give rise to both pleural and pericardial fluid, would



almost never be purulent, and would hardly appear so. Fluid from a tuberculous pericardium would also not be purulent, but it would appear so, at least in many cases. I do not believe that the fluid was actually purulent, as the culture was negative. The negative culture for tubercle bacilli is of little importance. The vagueness of the history of rheumatic fever also tends to exclude that diagnosis. I believe that a diagnosis of tuberculous pleurisy and tuberculous pericarditis is more likely.

Dr. Lynch: There are two conceptions as expressed by members of the class that I would like to comment on. The first is the expression "purulent effusion." The term "effusion" should only be used in a case of passive accumulations of fluid. When an inflammatory process is meant some such term as "exudation" should be used, as a "purulent exudation."

The second is the use of the term "purulent" itself. That term should not be loosely applied to a cloudy yellowish fluid, but should be reserved for those cases in which it is known that the clouding is due to the presence of leukocytes. This loose usage of terms was one of the reasons for the difficulties in this case.

The fluid was a yellowish fluid with flakes of fibrin in it. It was not a purulent pericarditis, but a tuberculous pericarditis. The proper descriptive term for this fluid is "sero-fibrinous."

There was about 300 cc. of this fluid, greatly distending the pericardial sac. Both visceral and parietal layers of the pericardium were greatly thickened as you can see in the mounted specimen (demonstrating autopsy specimen). Numerous yellow areas of caseation can be

noted. The state of "tamponade," as the term has been used here today, so compressed the heart muscle that the fibers appeared microscopically to be small and atrophic. There was some venous congestion in the myocardium, apparently from an inability of the coronary veins to empty. The effect of this would be to impair the nutrition of a heart muscle that is already being driven to the limit to maintain circulation in the face of pericardial tamponade. The inevitable result is circulatory failure and death.

The pericardial fluid so impinged upon the other thoracic contents that the left lung was almost completely collapsed. The pleural covering of the left lung was greatly thickened, and microscopically it also showed evidences of tuberculosis, altho the process was no longer active at the time of death. No doubt there was a tuberculosis of this lung, extensively involving the pleura. The pericardium could then become infected either by direct contact with the pleural covering, or by retrograde infection from the hilar lymph nodes.

The other lung was voluminous and normal. There were adhesions in the mediastinum that held the pericardium firmly in place against the sternum and other adjacent structures; this is the probable reason for the unusual outline of the heart shadow on the right.

Other structures at autopsy showed merely the effect of cardiac failure. The liver was enlarged and greatly engorged with blood. The spleen was about three times the normal size; it was doubtless the mass felt in the left upper abdominal quadrant.

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### FACTS OF GENERAL INTEREST ABOUT X-RAYS AND RADIUM

By

HILLYER RUDISILL, JR., M.D.  
Charleston, S. C.

I would like *first* to review briefly the discovery of x-rays and radium since in my experience the use of any therapeutic agent is more completely understood and appreciated if a little of its history is known.

X-rays were discovered in 1895 by Professor Wilhelm Conrad Roentgen of the University of Wurzburg Germany. Professor Roentgen was experimenting with vacuum tubes and noticed that some photographic plates, that were in light-proof containers, became exposed as from light when the vacuum tube was activated in close proximity to them. In a series of carefully conducted experiments Roentgen demonstrated that invisible rays were being emitted from the vacuum tube. Since this was the first time invisible rays had been produced Roentgen called them the "x" or unknown rays. They have since been called the Roentgen rays in honor of their discoverer.

Radio-activity was discovered by a French physicist, Henry Becquerel, in 1896. Becquerel found that ore rich in the element uranium would also expose photographic plates, when in light-proof containers, just as the newly discovered x-rays did. Further experiments with this uranium ore proved there was another and more powerful radio-active agent than uranium in the ore. In 1898 Monsieur and Madame Curie with G Bemont isolated the more radio-active substance, proved it to be a new element, and named it radium.

Ore containing radium has been found in many parts of the world but in most cases the radium content is so small that it is unprofitable to go through the very costly process of extracting the radium from the ore.

In the extremely rich in radium ore approximately 500 tons of chemicals and 1000 tons of coal are needed to separate 1 gram (about 15 grains) of radium. Radium is the nearest thing to perpetual motion that we know. It is continually giving off three types of rays that have been designated the A, B, and G. Without any process of renewal and even when constantly used radium loses only 1-2 its strength in 1680 years.

We have so far considered x-rays and radium separately but strange as it may seem they are a sort of double first cousin if not actually brother and sister. If we disregard the A and B rays of radium, which are of little or no importance in treatment, we have left only the G rays to consider. The G rays of radium and x-rays are both members of the large physical family called Electro-Magnetic-Vibrations, waves, or rays. To this class belongs the following:

Radio or Wireless Waves.

Heat or Infra-Red Rays.

Visible Light.

Ultra-Violet Light.

X-Rays.

G. Rays of Radium.

Cosmic Rays.

These rays differ from one another primarily in wavelength and their particular and individual properties *depend* on this difference in wavelength. Wireless waves are the longest varying in length from a few feet to a mile or more. The other rays and lights have progressively shorter wavelengths to x-rays and



radium which are the shortest of all rays, having any known therapeutic value at this time—the little understood cosmic rays are slightly shorter. X-rays and G. rays are so short that a special unit had to be created for convenience in describing them. This unit, suggested by the Swedish Physicist Angstrom, is roughly 1-200,000,000 (millioneth) part of an inch. The unit is called the Angstrom and is abbreviated A. U. for convenience.

It is necessary to emphasize the smallness of x-rays and radium rays since this feature explains their peculiar and important property of penetration of material and human tissue that are opaque to visible light and other rays. In other words these rays are so small they can go through the complex microscopic structures of the human body without being stopped and absorbed. The special properties of x-rays and G. radium that make them so useful in medicine are 4 in number:

1. Penetration.
2. Photographic.
3. Fluorescing.

4. The inability of abnormal tissue (particularly malignant cells) to withstand as great a quantity of either ray, as normal tissue can without being injured.

The first three properties are utilized in x-ray diagnosis: taking films and the fluoroscoping patients. The fourth property of relative or comparative resistance of healthy tissues and organs to x-rays and radium is the keystone upon which the entire structure of x-ray and radium treatments of both benign and malignant conditions is used. It is necessary here to again emphasize the similarity and to point out some differences in x-rays and radium.

A satisfactory machine to generate x-rays for treatment, including the necessary meters and measuring instruments, costs slightly upward of \$5,000. At least \$500 a year must be allowed for depreciation, repairs, replacement of worn out tubes, etc.

The unit of radium is called the milligram. A milligram is 1-65 of a grain and it cost about \$65. To form a better idea of the smallness of this unit an amount of radium the size of an ordinary 5 grain aspirin tablet would be 333 units and it would cost about \$22,000. For \$5,000, therefore, only 75 units or milligrams

could be obtained. I might digress to say that radium when purchase is in the form of the bromide salts and looks very much like yellowish powdered sugar. There is also slightly less than a pound of radium in the entire world of which a little more than 1-4 pound is owned by American doctors and institutions.

Too much stress on radium or on x-rays has been laid by certain writers who, not possessing both agents, have naturally tended to stress the agent that they happened to possess. The question is not one of radium versus x-rays but of the relative advantages and disadvantages of each agent. A through knowledge of these advantages and disadvantages should govern the indications and contraindications for each one. In certain conditions, or in certain phases of the same condition, radium may be preferable to x-rays and vice versa. Sometimes the two agents may be combined to advantage, and some conditions may be treated as effectively with one agent as the other, the relative advantage then being a matter of time, availability, convenience and cost. Technical considerations may also enter into the decision to use radium or x-rays, or both, in a given case.

The only real difference between x-rays and radium is that radium rays are slightly more penetrating, but it would take several pounds of radium, that is millions of dollars worth, to give off as many rays as we get from the \$5,000 x-ray producing machine. If this is the case you immediately wonder why bother with radium at all. The answer is that with even small quantities of radium it is possible to better treat certain conditions and areas than with x-rays. The outstanding advantages of radium is in the treatment of cancers of any of the orifices of the body. This includes cancer in the mouth, nose, and throat—cancer in the rectum, vagina, and cervix uteri. In these areas it is possible to place small radium applicators, with no attached apparatus or electrical connection, in and around the growth. Radium properly enclosed may be left in place comfortably for long enough periods of time to give an adequate amount of irradiation. As an example of this type of treatment we treat cancer of the cervix by placing a small applicator containing 70 mgms. of radium in and against the part. The applicator is left in place for three days and

patients do not complain. To get a sufficient quantity of x-rays to a cervical cancer would necessitate large quantities of rays passing through the organs surrounding the uterus, particularly the bladder and bowel. While normal tissues can withstand rays better than abnormal tissue we would still risk injuring the bladder and bowel with x-rays while in using radium properly this danger is completely obviated.

As an example of preferable use of x-rays I may cite the treatment of cancer on the surface. Sufficient x-rays to cure most skin cancers can be delivered in 1-2 hour while a G. radium equivalent dose would require 30 hours. The final result would be exactly the same and it would be impossible to tell whether x-rays or radium had been used.

I can not completely summarize this subject in a few words but as a general rule the following is true. X-rays are used to irradiate large areas after surgical removal or radium treatment to the primary growth. The x-ray treatments are given to destroy malignant cells that may have wandered some distance from the growth and so have not been removed at the operation or destroyed by the radium. The usefulness of x-rays in this manner is definitely proven, for example 40 per cent more patients have 5 year cures following surgical removal of breast cancer when the operation is followed by adequate x-ray therapy.

X-rays alone are used very successfully in many benign conditions both skin and internal. Besides being frequently the method of choice in chronic unresponsive skin diseases the following conditions usually show a gratifying response to x-rays:

1. Fibroid tumors of the uterus.
2. Abnormal uterine bleeding from various non-malignant causes.
3. Hyperthyroidism.
4. Purpura Hemorrhagica.
5. Tuberculous infections and other pathological conditions of lymph glands.
6. Persistence or hypertrophy of the thymus.

The above list by no means even partially covers the usefulness of x-rays but enumerates a few of the best substantiated ones.

There are a few recent developments in ir-

radiation therapy that I would like to mention before closing.

1. The G. rays of radium can be collected from the actual element, placed in sealed containers and will retain their activity for several days. These isolated rays are called radium emanation or radon. This radon can be so calculated that the initial quantity will just give the necessary number of rays so the applicator does not have to be removed from the body since it is no longer active. This is a particularly useful method of treating bladder tumors without operation. Small radium applicators can be easily introduced into the bladder through the cystoscope but they can not be removed in this manner. On the other hand radon applicators can be inserted through the cystoscope and they do not have to be removed. Since it is not necessary to remove radon it is also very useful for introducing into brain tumors and other parts of the body.

2. Large quantities of radium, several thousands units, have been collected and placed in special containers called radium bombs. Only a few of the largest cancer centers have these but they are very useful in irradiating large areas as with the x-ray tube which they approach in the number of rays given off yet retain the desired radium advantage of the rays being more penetrating than x-rays.

3. More powerful x-ray machines are being built in which the voltage activating the tube may be raised to 1,000,000 or more. Since the higher the voltage used the more penetrating are the x-rays produced these super-voltage x-ray machines approach very closely to radium rays in penetration yet they retain the x-ray advantage of a larger quantity of rays.

4. Insulated x-ray treatment tubes have recently been perfected. These can be inserted into the various orifices to give localized treatment like radium but in a much shorter period if time.

I have not mentioned these new developments with the thought of confusing you, although at best they are somewhat confusing, but to make a final emphasis of the close kinship between the two rays.

It is my humble belief that the problem of treatment of all malignant disease (except some of the rarer internal tumors and cancer in



some parts of the gastro-intestinal tract) is satisfactorily solved with good surgery and the proper quantity and type of irradiation; provided the malignancy is diagnosed early. In closing I will quote from a short article of mine published in the State Journal almost 5 years ago:

That radiation does not cure the majority of neoplasms is not the fault of the method of technique. Conservatively figured at least half of those presenting themselves for treatment have potential if not actual metastases. There are occasional reports of successful radiation of secondary malignant growths but usually they are not sensitive to radiation. Aside from the lack of response they are so extensive and in such inaccessible locations that it is futile to try and treat them.

Radiation therapy, in early malignancies, offers better and a nearer specific remedy than there is for many common diseases. There will continue to be improvements in x-ray and radium technique, but the factor that will double the percentage of cures is the education of the laity and physicians to the paramount importance of early diagnosis, and immediate radiation therapy; judiciously combined with surgery.

#### DISCUSSION

Dr. W. S. Judy, Greenville:

I want to express my appreciation to Dr. Rudisill for bringing this subject before the society and also for asking me to open the discussion. There is very little I can say in the discussion of his paper. He mentioned the fact that there is no rivalry between x-ray and radium, which is quite true. There are instances where one is preferable to the other, but there are other instances where the combination of the two brings about the best results. I might mention carcinoma of the cervix, which is advantageously treated by the combination of x-ray and radium. Radium in the canal itself is supplanted by short wave x-rays externally for the benefit of the potentially involved pelvic lymph nodes and broad ligaments, although there is no fixation. You frequently hear laymen, and sometimes physicians, mention the fact that they approve of one of these agents and censure the other. There is never any real need of that or excuse for it. The entire thing, in my estimation, is the ease of application. If you have an inaccessible location—for instance, the tonsil region, you have to use radium; you can not get your x-rays through the open mouth. Of course, you can through the skin.

One point I should like to emphasize is that ir-

radiation is not a treatment for terminal malignancy—a frozen pelvis, for instance. That patient is not suitable for anything but morphin, you might say.

The intent of Dr. Rudisill's paper, I feel sure, was to bring the fundamentals of radiation before the society. The man in general practice and the man who specializes in medical pursuits other than radiology is not deeply concerned with these things. In Greenville we have a set of men who, when a case is referred to me, always let me have a choice in its management.

Dr. Rudisill's paper, I think, was presented in order to bring these fundamental things before the society, and for that I wish to commend him.

#### PREVENTION OF LOSS OF WEIGHT IN THE NEWBORN

By

J. I. WARING, M.D.  
Charleston, S. C.

I am not sure that this paper will entirely clarify its title, nor that preventing or minimizing the usual and apparently physiological loss of weight is a necessary goal in the care of the newborn infant. However, there have appeared recently a number of articles which describe the desirability of efforts to reduce weight loss and to improve thereby the wellbeing of the child in his earliest weeks of life, and having sufficient curiosity to try several of the measures recommended, I have put together a few figures which are not conclusive, but which offer some suggestive points.

Nearly all newborns lose weight, and lose rather abruptly, as the body discharges meconium, urine, moisture from lungs, skin and drying cord and as normal metabolism breaks down tissue. Down goes the weight, usually to stay down, until the fourth or fifth day when the mother's breasts secrete a sufficient quantity and quality of milk to yield the energy required for gain. During this period some infants become obviously dry and feverish, and show some tendency to a general sluggishness and a slower final recuperation of weight. Others are not obviously affected, even tho weight loss be fairly large.

To some observers a considerable loss or a slow start in gaining means much in the matter of the early welfare of the child. For others,

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Read before the South Carolina Medical Association, Greenville, S. C., April 22, 1936.

unless the loss is very large there is no concern for the eventual improvement. All take into account the fact that when there is small loss one seldom sees the frequently alarming, even if not necessarily dangerous, symptom of inanition fever, or dehydration fever of the newborn, a development which is quite common among infants who lose a large portion of their weights.

For many years attempts have been made to obviate this initial loss, with the idea that the infant will become a more vigorous nurser and a stronger organism. It has been found that in the first few days of life the immature alimentary tract can utilize but poorly the milk of an actively lactating human breast, and that instead of gaining, infants actually lose when given breast milk from another source. Human colostrum is satisfactory, but generally in insufficient quantity to meet metabolic requirements, hard to get from other sources than the mother, and somewhat hard to imitate.

To save weight and maintain health several types of artificial feedings have been used with results somewhat variable. These have run from plain boiled water thru lactose solutions, lactose and salt solutions, to mixtures of sugar, salt and gelatin or various milk and sugar mixtures. Water alone seems less satisfactory than these solutions.

The object of the administration of all of these various mixtures has been to supply fluid and sugar available for combustion; some aim to add salt to aid retention of water, others to add further a certain amount of protein presumably beneficial to metabolic activity. While reports vary, it has appeared that under unusually good conditions certain solutions are capable of reducing the usual average loss of 8 or 9 per cent of the birth weight to between 1 and 2 per cent, with a corresponding benefit to the child's condition. Such a reduction has been reported with a mixture consisting of 6 per cent gelatin, 3 per cent dextrose, and 1 per cent salt, administered every two hours during the first 24 hours. With a mixture of 5 per cent Beta-Lactose with 5 grains of sodium citrate added to each two ounces the loss was reduced to 3.9 per cent. With milk mixtures the reported reductions have been less, and it seems to make relatively little difference whether the

milk be fluid or dry, plain or acidified, or whether the sugar be lactose, glucose, dextrimaltose or what not.

The advantage of the mixtures containing sugar is that they supply readily available and needed energy. The addition of salt apparently aids the retention of water in the infant's body, and an alkaline salt is probably useful in a period of weight loss with its tendency to acidosis. The use of milk has been criticized because of the possibility of sensitizing an infant to the milk protein. Our own feeling is that anything other than the simplest kind of solution militates against successful breast feeding, and that the miscellaneous formulas carelessly given to newborn infants are productive of much harm in the way of discouraging nursing, for the bottle is generally an easier source of supply than is the breast for the lazy baby, and becomes the infant's preference. We have found too that gelatin solutions frequently give rise to diarrhea which would seem to offset its advantages. Its administration requires rather more individual care than is feasible in the average hospital nursery.

A recent comparison of several mixtures by Schroer and Laffoon (1) results in the award of the palm to a lactose-citrate mixture.

The mixtures were as shown in tables 1 & 3.

Our own results on a smaller group of infants show the inconsistency common to small statistics. The infants were all fullterm, apparently normal. That no distinction was made between the children of multiparous or primiparous mothers might be a criticism, for the former are more apt to gain early. During the past summer (1935) alternate infants as they arrived were put on the gelatin-sugar-mixture and on a mixture of dried lactic acid milk and Beta-Lactose (Lactic acid milk, dry, 5 tablespoons, Beta lactose 2 tablespoons, water 14 ounces). During the winter alternate babies were put on water alone and on the Lactose citrate mixture.

The results were as shown in table 2.

Our small figures seem to show that as far as gain and freedom from fever are concerned nearly anything is better than plain water, that an early start toward gaining was best attained with the gelatin or milk mixtures, that the gelatin was superior in bringing about an ac-



Table 1:

<i>Complementary Feeding</i>	<i>Stock Formula</i>	<i>Amount offered each feeding (Oz.)</i>	<i>Number daily feedings (No.)</i>
Water		2	2
Expressed breast milk		2	6
Half skim milk, water, and dextrimaltose	9 oz. 1-2 skim milk, 9 oz. water, 1 tbs. dextrimaltose	2	6
Alpha lactose (milk sugar)	Alpha lactose 2 oz., boiled water 32 oz.	2	6
Beta lactose	Beta lactose 2 oz., boiled water 32 oz.	2	6
Gelatin Solution	Gelatin 6 tbs., dextrose 3 tbs., sodium chloride 1 teaspoonful, water q.s. ad 32 oz.	2	12
Beta lactose and sodium citrate	Beta lactose 2 oz., sodium citrate 1 dram, boiled water 32 oz.	2	6

The results were as shown here.

Table 2:

<i>Complementary Food</i>	<i>Average initial loss</i>			<i>Percentage back to birth weight</i>		
	<i>Total number of infants</i>	<i>Average birth weight (in lbs.)</i>	<i>Ounces</i>	<i>Per cent</i>	<i>On fifth</i>	<i>On tenth</i>
Water	70	7.12	9.3	8.2	5.7	26.6
Breast milk	20	7.08	8.3	7.3	12.5	47.7
One-half skim milk, dextrimaltose	151	7.25	8.7	7.5	13.3	57.1
Alpha lactose solution	180	7.00	6.5	5.8	12.0	51.2
Beta lactose solution	55	7.15	5.9	5.2	18.2	59.0
Gelatin solution	235	7.12	5.0	4.4	23.2	73.4
Beta lactose-sodium citrate solution	251	7.10	4.4	3.9	62.3	80.5

Table 3:

	<i>Cases</i>	<i>Percent weight loss</i>	<i>Percent gaining by 4th day</i>	<i>Percent gaining over birth wgt. by 4th. day</i>	<i>Percent with fever</i>
Lactose Citrate	23	4.64	43.5	17.4	21.7
Gelatin Mixture	39	4.54	82	50	20.5
Lactic Acid Milk					2.5
L. A. M.	39	4.73	82	25	
Water only	23	6.48	48	21.7	43.4

tual gain early. There seemed to be less fever with the milk, most with plain water. All the children who had the mixtures showed a smaller total loss than those who had water alone.

Our conclusion is not definite. We feel that the gelatin mixture often gives trouble, tho the figures above seem to show it is useful. We object to milk mixtures early because they make later nursing difficult and because they may sensitize the infant. We are inclined to prefer simple lactose solution or the lactose citrate solution to other forms of early complementary feeding.

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#### DISCUSSION

Dr. Julian Price, Florence:

I think most of us would agree that in the average baby the initial loss of weight is of little consequence.

On the other hand, there are cases in which the initial loss of weight does mean something and if some simple procedure can be used by the physician in the home, as well as in the hospital, the results will be better. As Dr. Waring has said, attempts have been made to use milk in various forms, to use lactose solution, to use gelatin, etc. I feel with Dr. Waring that it is better not to use milk. Personally I have been using a solution of lactose or glucose and I find that most of the babies receiving this preparation do better than those receiving only water. Further, I find that when we give the baby some such solution there is not the temptation to put the baby to breast immediately after birth. Often the mother has had a hard labor and needs rest, and the placing of the baby to breast a few hours after birth is exhausting to the mother. A simple way of preparing a solution is to put two teaspoonfuls of lactose or glucose in six ounces of water—allowing the baby to take as much as he will.

I think the question which Dr. Waring has brought to our attention is one that most of us will dismiss lightly. I think, however, that if we could adopt some such simple procedure as he has suggested as a routine we will avert serious trouble in an occasional case.

#### \*PRESIDENT'S ADDRESS

By

SAMUEL E. HARMON, M.D., (Deceased)  
Columbia, S. C.

Fellow Members of the South Carolina Medical Association:

I desire at this time to thank you again for honoring me with your highest position of honor and trust. I can, and do, conscientiously assure you that I did not in any way seek the office. I made no intimation that I cared for it; my friends thrust it upon me. However, I sincerely hope that I earned, and that at no time will I ever, either by word or deed, cause you any regret.

I could have gone over my records and selected some subject and have given you the benefit of my experience and results for the past twenty-five years that probably would have interested you more than the subject that I have chosen but my thoughts ran in another direction, The

theme that I have selected is, "Service by the Medical Profession."

If I am to tell you what I think is the greatest need of the medical profession today I will unhesitatingly say that *organized*, cooperative, efficient service, with absolute honesty of purpose, stands out with clarity at the top of the list. As an organization we need to meet everyone on the level, to face the world with an open mind and an honest, clear conscience as to local, state, and national problems. Such an organization must not be a selfish one, or one with any unreasonable demands without due regards for all public good; but rather it must be one to carry on the lofty ideals of efficient service which have possessed our leaders in the past. Nothing but the highest type of cooperative, honest, efficient service in every way to all the people will, in my humble opinion, retain for us that ideal individual initiative that is most essential, that which has possessed our profession in the past.

It was Hippocrates, born about 450 B. C., who really rendered the first worthwhile service by giving rational medicine the general form it has today. Because of the ability of this great physician medicine is called the Hippo-

\*NOTE—President Harmon died December 26, 1935 but with characteristic foresight he had completed his Presidential Address. This address has been turned over to The Journal for publication.—Editor.



cratic art. The period of Hippocrates influenced scientific and artistic life. Hellas said, "It is the epoch which brought forth the statesmanship of Pericles, the philosophy of Socrates. What Socrates was to philosophy, Hippocrates was to medicine."

Only a brief summary of his achievements can be detailed. He freed medicine from the fetters of Oriental dogmatism; he freed it from the leading strings of the priestly caste; he made it a rational science; he formulated the famous Hippocratic Oath wherein he laid down the duties of Asclepiad toward teaching pupils and patients, and defined medical ethics and etiquette.

He taught that the good of the patient constituted the only goal of medical thought and action, for "where love of mankind is there is also love of the art," and declared it impossible to attain progress in medicine in any other way than through that of experience. Each separate case of illness was to him a natural phenomenon which was to be studied with all the available aids to observation, personal and vicarious experience being brought to bear upon the case with due regards to individual peculiarities and to its affinity with nature as a whole. The patient was to be studied rather than treated as a preconceived theory to be supported. He was a true clinician with scant knowledge of anatomy and physiology; he aimed to assist nature in curing his patients, and his writings may be accurately described as a day-book of nature. He will stand as a shining example of philanthropic and professional faithfulness, a seeker after truth with full consciousness of its being unattainable.

The first real service rendered in an effort towards preventative medicine was in 1798 when Jenner announced to the world the preventative value of vaccination. It was he who rendered the first real service to civilization towards preventative medicine. We are told by historians that before the time of Jenner it was unusual to meet in London anyone whose face was not marked by small pox. There was a popular belief that one who had had cow pox was immune to small pox. Jenner put this belief to a scientific test and the result was the discovery of vaccination resulted in the abolition of this disfigurement, and a marked reduction in mor-

talidity. At the present time no one should contract small pox.

The service rendered humanity by Louis Pasteur, Joseph Lister, Robert Koch, and William C. Gorgas stands out today as brilliantly as it did at the time of their work. The service these men rendered is known in a general way by all medical men and by a percentage of laymen. Pasteur, as a result of his service rendered to mankind in working out the prevention of the development of rabies, lived to see himself honored by all the world, to become the pride and glory of France. The great Lord Lister said to Pasteur, "You have raised the veil which for centuries had covered infectious disease; you have discovered and demonstrated their microbic nature."

Dr. Joseph Lister's pioneer work in the study of the prevention of infection, and proving to the world that carbolic acid in solution would destroy microorganisms, and his paper on Antiseptic Principles in the practice of surgery marked the beginning of a revolution in surgery, all of which greatly strengthened Pasteur's theory of disease.

Dr. Robert Koch, in 1876, announced to the world that he had worked out the life history and sporulation of the anthrax bacillus. In November, 1877, he published his method of fixing and drying bacterial films on cover slips and staining them with aniline dyes. In 1878 he described the bacteria of six different kinds of surgical infection, and showed that all bred true in the test tubes and in animals. In 1881 he demonstrated his method of obtaining pure cultures by the use of gelatin plates. In 1882 he identified the Tubercle Bacillus by his special method of cultivating and staining. In 1883 he discovered the Cholera Vibrio and established its relation to disease.

About 1900 fortune favored medicine and the entire world at that time by having in control at Cuba a military governor, General Leonard Wood, a man of vision and medical training. Major William C. Gorgas, another medical man of great vision, was chief sanitary officer. General Wood gave to Major Gorgas every facility for the practical application of his knowledge by the help of the Reed Board. They began the education of the world in the prevention of yellow fever and by August 1903

the Surgeon General of the Army reported that yellow fever had been stamped out in the United States territory and no case originated in Cuba for about two years.

When it was decided to dig the Panama Canal Major Gorgas was made chief health officer with the rank of Colonel. He wished to apply against the mosquito-borne diseases of the Isthmus the same sort of measures that had given him success in Havana. However, he was not a member of the Canal Commission and since his plan involved the expenditure of large sums of money he was handicapped. His superiors were not men of General Wood's training or vision; they were eminent engineers who had not learned the whole lesson of Havana, and who had their own ideas as to what was needed. Gorgas did his work for ten years under hampering restrictions that would have discouraged most men but through it all he kept his head, persisted in what he knew was the proper course, accomplished a marvel of sanitation, converted the Isthmus from a pest hole into a place where Americans and others could work safely and efficiently, freed it from yellow fever, and reduced malaria and typhoid. In this way he made possible the speedy completion of the great work of building the canal without any great mortality such as had attended previous attempts, and had marked the construction of the Panama railway of which it had been said that every tie marked a death in the construction force.

Dr. Crawford Long rendered invaluable service to suffering humanity that would enable it to be relieved of suffering conditions and disease, free from pain, when he discovered the anaesthetic properties of ether.

Our own Dr. J. Marion Sims, the father of gynecology, born and reared in South Carolina, studied medicine one year in Charleston, South Carolina, finished in Philadelphia, and commenced his medical career at Lancaster, the place of his birth. He rendered invaluable service to suffering humanity and the world that will stand out a bright halo for all time.

When he was called to see a Mrs. Merrell after she had been thrown from her horse, and was having agonizing pains in her pelvis, he remembered that old Dr. Prioleau of the Charleston Medical College had told his class that if

they were ever called to see a case of sudden version of the uterus backward to place the patient on the knees and elbows, the genu pectoral position, introduce one finger into the rectum, one into the vagina, and push up and pull down. Dr. Sims did this and the patient was relieved. He realized that the position, and the air rushing into the vagina extended it by natural pressure, conjoined with the position, relieved the patient and restored the uterus. Dr. Sims said, "If I can place the patient in that position and distend the vagina by the pressure of air so as to produce such wonderful results, why can't I take the incurable Vesico Vaginal Fistula Case which seems now to be incomprehensible and put the patient in this position and see exactly what the relations are with the surrounding tissues." Fired with the idea he immediately went to a store, purchased a pewter spoon, bent the handle and made Sim's vaginal speculum that we use today, and which has never been improved upon.

He placed Betsey, the colored girl, in position and before he could get the bent handle into the vagina the air rushed in with a puffing noise dilating it to its fullest extent. Introducing the bent handle of the spoon he reports, "I saw everything as no man had ever seen before; the fistula was as plain as the nose on a man's face." Full of zeal and energy he immediately set to work making his own instruments and operating upon these poor unfortunates who had been incurable, making an effort to suture up the opening between the bladder and vagina. This was before the day of Long, Pasteur, Lister, and Koch, and he knew nothing of bacteria, infection, antiseptics, or anaesthetics. He operated upon sufferers without the aid of an anaesthetic, some of them as many as twenty to thirty times each with always a partial failure. His friends and colleagues were convinced that he was crazy and pleaded with him to cease his efforts, telling him that he would never succeed; but, being a man with undaunted courage, an investigating mind, and with the firm belief that he would eventually succeed since he realized that he could suture up other tissues of the body with success, he continued at his work. He believed that his suture material was at fault so one day while walking from his home to his office he picked up a



little bit of brass wire in the yard. He immediately went to his jeweler and asked him to make him some fine silver wire which he did, to be used as suture material.

Anarcha, the subject of his next experiment which was successful, was cured, the first case ever known to be. This was May or June, 1849. Dr. Sims made a world wide reputation for himself which is indelibly stamped in history for all time. This work was only one of his many brilliant achievements that stood out paramount; there were many other acts of service rendered by him.

Doctors Welch, Halsted, Osler, and Kelley,—four master minds in medical science, all rendered invaluable service in developing and teaching the waiting world many fundamental principles. The pioneer work performed by these men made the Johns Hopkins Medical Institution what it is today. They were real doctors and educators. They were to the medical world and that section of the country what Dr. John B. Murphy was to Chicago and the world, and what the Mayo brothers and Crile were to the middle and north west and the world. All rendered service to humanity that was disseminated throughout the entire universe and will be indelibly stamped in the annals of history in perpetuity. Sir William Osler taught the world many fundamental principles, among them that sick people would get well in many instances if properly cared for, without nauseating drugs. Dr. John B. Murphy, the greatest man of his day was a real rounded out doctor and teacher. He taught the world many original scientific principles in the study and practice of medicine and surgery. These men that I have merely mentioned in my theme, for lack of time and space, were and are all outstanding doctors and teachers who stood at the head of their classes in rendering service to humanity in its search for truth. We cannot be their equal, nothing near it, though we can strive to emulate them in principles in doing our utmost in performing our duty with outstanding honesty of purpose and rendering service to humanity.

As a direct result of the untiring efforts and service rendered by the organized medical profession since the time of Hippocrates the span of life has been increased by reducing the mor-

bidity and mortality rates. In 1800 the average span of life was thirty-three years. In 1855 it had increased to thirty-nine and seven tenths years, and in 1901 it had gone to forty-nine and three tenths years. In 1910 the expectancy of life had gone up to fifty-one and four one hundredths years, in 1920 it was fifty-six and three tenths years, and in 1924 it was fifty-eight and one tenth years. These figures show that eighteen and four tenths years have been added to the average span of life since 1855, and eight and nine tenths years since 1901. The death rate from all causes has decreased from seventeen and five tenths per one thousand in 1900 to twelve in 1928. This service has been rendered by the organized medical profession through hard earnest work and individual initiative of the type of men that I have mentioned along with thousands of other honest workers seeking after truth in the development of science.

The ideals of medicine are broad though very simple. High principles of service to mankind could not have made the medical profession what it is unless there had been ideals. From the very time of the founding of medicine the interest of the patient and of the public has been the first consideration in the minds of every true physician. Political domination of medicine will, in our opinion, undermine the ideals of the profession, which means that professionalism will surely be destroyed. It will destroy scientific ambition and reduce physicians to the state of hirelings, subject to the dictation of unqualified persons.

The organized medical profession must strive to retain the ideals of medicine in order that we may continue to serve effectively. I am sure that we need a house cleaning. This is a service that we owe to our patients, our profession, and our people. In good faith we should devote ourselves to our task; our profession needs it; we know that it does, and the public knows it. We are all suffering, our influence is minimized, our honesty doubted, and all because of the sins of a few or a small per cent of our own ranks. We should not longer delay the already too long deferred house cleaning. However, reforms are possible only from within. We must perform our own work. Lay men may think that a considerable number of doctors

are dishonest; they may see a percentage in action and be convinced of their grossly unethical practice, but they are helpless. Upon the doctor, who honors our profession, rests the responsibility of effecting reforms by rigid united action of the great majority. We can drive out the shysters and in doing so we will greatly improve the prestige of our great profession and perform a great service urgently needed for society. The impression that I wish to convey and indelibly stamp upon the minds of all is that we have a percentage of undesirables, in many ways, in our profession, just as there are in every profession and in every walk of life. We know them, they themselves know who they are, and the public knows them. We have been derelict in our duty in house cleaning; we should sweep before our own door; the time is now, and there is a way. Any honest constructive effort made by the majority of the organized medical profession can be developed, accomplished, and maintained. Suggestions for rendering this service are contained in the following paragraphs. I quote in part from the report of the Judicial Council of the American Medical Association for June 1935.

Public confidence in our avowed declaration for medical control over things medical cannot be successfully cultivated and maintained unless we exclude or remove from the ranks of our organized profession those who ignore our ethical code, especially as it applies to the true professional spirit in our relation with each other and with every patient. It is apparent that the very democracy of our existing set-up may become involved unless our county and state societies rapidly develop to meet adequately local situations arising from the professional activities of a small but thoughtless or indifferent proportion of numbers. If the societies will not exercise their prerogative or discharge their duties in this connection it will become advisable to extend the disciplinary function now resting with the county societies to the state association, and possibly to the national administration. When people, laymen as well as members of our profession, realize that the principles of medical ethics are the basic principles of honest fair dealing and that their observance is necessary to the best interest of the whole people, laymen as well as the members of the

profession, medical practice will have taken a long step upwards. Medicine will have more dignity and authority and people will be better served.

The surest and most effectual way to purge and purify our profession and the performance of the healing art in any way is for the majority of those who are deeply interested in clean, efficient, scientific medicine to organize solidly behind a constructive move to see that only hand picked men who are eminently qualified in every way are chosen for officers of all associations, also members of all boards and committees, including local boards of health and health officers. Members of hospital staffs should be selected on their worth and ability to render real honest, constructive, efficient service, and not for their congeniality and popularity either personal or political.

The creation and enforcement of laws to make possible that all medical affairs shall be under the control of one scientific board in each state is needed.

All applicants who apply for license to practice the healing art should pass a successful examination on all basic science subjects.

All who practice the healing art should be re-examined periodically on all clinical subjects such as diagnosis, practice of medicine and surgery, gynecology, obstetrics, and pediatrics; the reason for this is obvious to all.

### *Reverence*

The following is a Sunday Morning Prayer composed by Lieutenant Colonel Clayton E. Wheat, former chaplain of the Military Academy, West Point, that I have transformed to fit our profession:

"Oh God our Father, thou searcher of men's hearts, help us to draw near to Thee in sincerity and truth; may our religion be filled with gladness and may our worship of Thee be natural.

"Strengthen and increase our admiration for honest dealings and clean thinking; suffer not our hatred of hypocrisy and pretense ever to diminish, encourage us in our endeavor to live above the common level of life, make us to choose the harder right instead of the easier wrong, and let us never be content with a half truth when the whole can be won; endow us with courage that is born of loyalty to all that



is noble and worthy, that scorns to compromise with vice and injustice and knows no fear where truth and right are in jeopardy.

"Guard us against flippancy and irreverence in the sacred things of life. Grant us new ties of friendship and new opportunities of service, kindle our hearts in fellowship with those of cheerful countenance and soften our hearts with sympathy for those who sorrow and suffer. May we find genuine pleasure in clean and wholesome mirth and feel inherent disgust for all coarse minded humor. Help us in our work and in our recreation to keep ourselves physically strong, mentally awake, and morally straight, that we may thus better maintain the honor of our great profession untarnished and unsullied and acquit ourselves like men in our effort to realize the ideals of our noble profession in doing our duty to Thee and to our country; all of which we ask in the name of the great friend and master of men. Amen."

Let us live not for ourselves alone and the present, but for the greater and more intelligent life of the future; not for myself but for the truth that in life I have spoken. Not I, but the seed that in life I have sown, shall pass into the ages. All about me shall have been forgotten save the truth that I have spoken, the things I have done.

#### REFERENCES

Dr. Victor C. Vaughan President of A. M. A. address 1914.

Dr. Olin West Secretary and General Manager of A. M. A. address 1932.

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Wilmer Krusen M. D., D. Sc., L. L. D. talk on science.

Autobiography Dr. J. Marion Sims.

Biography of Dr. William Stewart Halstead by Dr. W. G. MacCallum.

#### YORK PHYSICIANS IN SOCIAL MEET

One of the most enjoyable meetings of the York County Medical Society held in years was staged Friday, July 24, at Sharon with Dr. J. H. Saye and Dr. C. O. Burrus, as hosts to the visiting medicos. Wives of the physicians were in attendance, as the meeting was of a semi-social nature.

Speakers of the occasion were Dr. R. M. Pollitzer and Dr. Robert C. Bruce of Greenville, and Dr. S. H. Shippey of Rock Hill. Doctor Bruce is President of the South Carolina Medical Association. The talks were not devoted exclusively to medical topics but were broad enough to interest the entire audience.

At the close of the meeting, which was held in the Sharon high school the medicos were invited outdoors where a spread of dainty delicacies awaited them.

Practically all the medical men of York County attended the meeting. Physicians from

out of the county included: Doctors Allen, Moore and Miller of Charlotte; Glenn of Gastonia and Wylie and Young of Chester.

Eastern Carolina Medical Assembly, Ocean Forest Hotel, Myrtle Beach, S. C., June 23rd, 1936, 3:00 P. M.

Pernicious Malaria in Children, Dr. Julian Price, Florence, S. C.

Factors in Mortality in Acute Appendicitis, Dr. George H. Bunch, Columbia, S. C.

Fractures of The Lower End of The Humerus, Dr. A. R. Shands, Duke University, Durham, N. C.

Cerebral Thrombosis, Dr. Walter R. Mead, Florence, S. C.

Maternal Mortality in South Carolina, Dr. Robert E. Seibels, Columbia, S. C.

Discussion, Dr. J. A. Hayne, S. C. Board of Health, Columbia, S. C.

Dinner—Dance.

# THE JOURNAL

OF THE

## South Carolina Medical Association

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## AUGUST, 1936

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### DEATH OF DR. D. M. CROSSON, PAST PRESIDENT

#### SOUTH CAROLINA MEDICAL ASSOCIATION

In the passing of Dr. Crosson of Leesville, Lexington County, the South Carolina Medical Association loses one of its oldest members and one who had been signally honored in organized medical circles and in many other spheres of activity. Dr. Crosson was a charter

member of the Lexington County Medical Society. He served three times as State Senator and it was during this period of his professional life that he probably accomplished his greatest work in behalf of organized medicine. It was during this period that the State Medical Association was very active in its opposition to various cults securing legal status in the State. Senator Crosson was a militant defender in behalf of organized medicine along this line.

Doctor Crosson was born in Prosperity, September 29, 1858, was educated at Erskine college and at the Medical College of the State of South Carolina, receiving his degree at the University of Tennessee. He had practiced medicine in Lexington county since 1880.

Dr. Crosson took particular pride in the fact that during his service in the general assembly he was the first advocate of paved roads across the state. He was a staunch Democrat and always took a prominent part in county and state politics, having served Lexington for eight years as county chairman. He served six terms as mayor of Leesville and then refused to offer again for re-election. He was also actively interested in agriculture and identified himself closely with every leading farm movement of county and state.

He was a student of economy and recently served as president of the Lexington Farmers and Taxpayer's League.

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### PIEDMONT POST GRADUATE CLINICAL ASSEMBLY ANDERSON, SEPTEMBER 8, 9, 10

Efforts at post graduate courses have been made in South Carolina from time to time by the Medical College and by the State Medical Association but in 1935 a post graduate course was started at Anderson as a result of the obstetrical post graduate courses conducted throughout the State by Dr. J. R. McCord of Atlanta under the joint auspices of the Children's Bureau of the U. S. and the State Medical Association. The first attempt was a marked success and it is expected that the second one will be even a greater success.

The general plan follows that of last year, that is, the general practitioner will be kept in mind and courses arranged in Internal Medi-



cine, Pediatrics and General surgery. Distinguished professors from the Medical College, Charleston, from Emory University, Atlanta and several others who have had large teaching experience will constitute the faculty.

While the name may have a local bearing it is intended that these courses shall be of state wide scope, indeed shall extend to the surrounding states. The facilities at Anderson are

ample to take care of a large crowd. The Anderson County Hospital and its new nurses' home offer an ideal setting. The time of year would seem to be quite suitable for medical men to relax a bit after the strenuous summer practice and spend the three days at Anderson. The officers wish to extend a cordial invitation to every doctor in South Carolina to participate in these post graduate courses.

## PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 310(29451)

February 14, 1936

*Case of Drs. Richards and Prioleau*

Student Zalin (reading):

A negro woman, 55-65 years of age, admitted 7-1-35, died 10-12-35.

History: Onset 3 weeks before admission with progressive swelling of abdomen. Several days before admission general weakness became apparent, and vomiting began. Continued to vomit almost all food taken until hospital admission. Abdomen was tapped several days before coming to hospital; no apparent relief was secured.

Has been constipated for several years, requiring frequent laxatives. No melena. Appetite generally good; no hematemesis. Menses always regular, menopause in 1919, no bleeding since. Some sticking pain in L.L.Q. of abdomen in Jan. 1935 upon walking or working more than usual. Only one pregnancy. "Womb" had protruded frequently with straining since March 1935. Burning on urination and nocturia for several months.

Exam.: Small, somewhat emaciated negro, temp. 98, pulse 110, resp. 24, BP 160/70. Mucous membranes pale. Teeth carious. Breasts atrophic. No abnormal chest findings. Mediastinum not widened. Heart apparently not enlarged. No murmurs. Pulse rapid and feeble. Radials sclerosed and beaded. Abdomen: Bulges in flanks, fluid wave elicited. Large, tender, indurated, fixed mass about the size of a grapefruit in L.L.Q. Tender, hard,

indefinite small masses palpated to left of mid-line below umbilicus. Rectum: "Constricting band felt within the anus but not narrowed down." Pelvis: Uterus prolapsed (procedentia). Firm tender mass the size of grapefruit in left half of pelvis, apparently fixed to lateral wall. Remainder of exam. Negative.

Lab.: Urine (7-1; 7-26) vd.; S.G. 1.016; alb. 0-2 plus; sugar acetone and casts neg.; leukocytes 5 per HPF; no RBC. Blood (7-1; 7-10) Hb 53 per cent D, 50 per cent D; RBC minus, minus; WBC 9,900 and 5,200; achromia 1 plus; polys 62, 63 per cent; lymphs 38, 32 per cent. Blood Kolmer and Kline neg. Peritoneal fluid (7-18) light green with reddish tinge; cells 381 per cu. mm., predominantly lymphocytes; S.G. 1.020; no coagulum; alb (Esbach) 4 per cent. Feces (7-11) completely neg.; no chemical blood (benzidine). X-rays (Chest, g-i series, colon): See chart.

Course: Temp. slightly elevated (100) on several occasions for first few months. On 9-22 temp. rose to 101.6. Temp. curve from then until death very irregular, varying from 102 to 96, usually reaching peak in afternoon or evening. Pulse also very irregular, varying from 90 to 140, generally rapid towards end. Resp. 20-28 throughout stay. On 7-10 passed 5 white, jelly-like stools, with considerable gripping pain, no bleeding. Vomiting cleared up soon after admission to hospital. Fluid in abdomen accumulated rapidly, requiring paracentesis on 7-18, 4,390 cc. being removed. Tuberculin (0.1 mgm) negative. Laparotomy on

7-26. Postoperative course uneventful except for abdominal "distention," and discomfort. Out of bed 3 weeks later. Occasional vomiting. Abdomen tapped 8-13, 8-30, 9-10, 9-19, 9-26, 10-7. Became quite weak early in October, persistent diarrhoea developed. Died 10-12 at 8:55 A.M.

Dr. Prioleau (conducting): This case presents a great many findings, and it is difficult to correlate these. Mr. Settle, will you open the discussion?

Student Settle: We have the history of an elderly woman who has noted progressive swelling of the abdomen, constipation, and occasional abdominal pain. On examination she had a fixed mass in the left lower quadrant of the abdomen, and this is doubtless the cause of her trouble. The problem is, what is that mass? It may well be in the ovary, but this woman is older than most women with ovarian cysts.

Dr. Prioleau: What do you think about the rectal condition?

Student Settle: I don't know what the examiner meant when he wrote "Constricting band felt within the anus but not narrowed down."

Dr. Prioleau: Not infrequently we find the walls constricting and thickened, without apparent involvement of the mucosa; I imagine something like that was meant here, altho it was expressed poorly.

Student Settle: The nature of the fluid removed at paracentesis is very suggestive of tuberculosis: the cell count, the lymphocytic predominance and the albumin content indicate that the fluid was an exudate rather than a transudate. But this and the persistent fever are all that suggest tuberculosis.

The stools do not appear to me to be very typical of anything. But when correlated with the history of constipation and with the findings on rectal examination, the possibility of carcinoma of the rectum or sigmoid must be considered, even in the absence of rectal bleeding.

I would like to know what the findings at operation were.

Dr. Prioleau (reading from operative record): "The abdominal cavity contains about 4 quarts of straw-colored fluid. There is a large soft mass in the cul-de-sac. The omentum is covered with small grayish areas, very much

congested. There are nodules over all the pelvic organs, and the organs there are matted together. There are a few liver nodules."

Now what do you make of it?

Student Settle: I think those nodules were probably carcinomatous nodules. Its origin is still not clear, as the pelvic organs were so matted together that the exact localization of the mass could not be made out. It seems to me that it was probably in the sigmoid or rectum, with subsequent metastasis to the peritoneum and the liver. The nature of the abdominal fluid can be explained on that basis, although the fluid accumulated more rapidly than I would have anticipated. The fever must be the result of some infection.

Dr. Prioleau: Mr. Watson, what can you add?

Student Watson: I agree in the main with Mr. Settle, and believe that the primary tumor was in the rectum, with metastasis to the liver. The fluid could be explained on the basis of portal obstruction from the tumor nodules in the liver.

Dr. Prioleau: But fluid passively accumulating in this manner would be a transudate, and would differ materially from this.

Student Watson: Yes, the nature of the fluid goes with carcinoma of the peritoneum, plus a low-grade infection.

Dr. Prioleau: We seldom see a carcinoma of the rectum as far advanced as this without causing intestinal obstruction. Do you think she had obstruction?

Student Watson: I thought at first that the mass might have been a fecal impaction, the fecal mass later becoming channelized with free passage of feces.

Dr. Prioleau: The tumor is larger than the usual fecal impaction, and the process you have described would be very unusual.

Student Watson: I believe that the small nodules on the peritoneum were daughter tumors, implanted from the primary tumor by invasion of the peritoneum. My diagnosis is carcinoma of the rectum.

Dr. Prioleau: All right. But there are some findings which would be anticipated with carcinoma of the rectum at this stage which are conspicuously absent, and there are some findings



present which cannot be explained on that basis. Mr. Rutledge?

Student Rutledge: I do not think that tuberculosis can be ruled out so easily, at least not with the knowledge of the case only up to the time of operation. The nature of the stools could be explained on the basis of a tuberculous enteritis. The fluid fits in nicely with the diagnosis of tuberculous peritonitis. The irregular fever is also consistent with that diagnosis. The mass noted at operation might have been encysted fluid. But of course the finding of liver nodules makes that unlikely, if we can understand that the nodules were within the liver and not just on its surface. The negative tuberculin reaction can be explained on the basis of an overwhelming infection. I am more inclined to believe that the condition was a carcinoma of the lower bowel, but I think that tuberculosis of the peritoneum would have been a very logical diagnosis before operation. The mass could have been either encapsulated fluid or a tuberculous fallopian tube.

I would like to disagree with Mr. Settle on one point: I do not believe that we can rule out ovarian tumors because of the age.

My diagnosis is either carcinoma of the rectum or tuberculous peritonitis, with the former more likely.

Dr. Robert Wilson: If the preoperative diagnosis had been tuberculosis, would there have been any reason for laparotomy?

Student Rutledge: For some unexplained reason laparotomy frequently helps cases of tuberculous peritonitis. May we see the x-rays?

Dr. Rudisill (demonstrating x-rays): We did two examinations of this patient. In July 1935 she was referred to us with a clinical diagnosis of either tuberculous peritonitis or carcinoma of the uterus. A chest film showed no evidence of pathology except for calcified plaques in the aorta.

Nine days later we received another request for examination with a clinical diagnosis of carcinoma of the gastro-intestinal tract. A complete examination of the esophagus, stomach and duodenum revealed no evidence of disease in these organs. The following day a barium enema revealed that the colon was somewhat spastic. We made a diagnosis of a moderate

colitis, with no evidence of tumor of the gastro-intestinal tract.

Dr. Prioleau: Mr. Rutledge, does this affect your opinion?

Student Rutledge: Well, it doesn't help any.

Dr. Prioleau: Mr. Watson, do you think that the x-ray is a satisfactory method for studying the rectum and lower sigmoid?

Student Watson: Yes, I think it is good for every part of the tract except the lower part of the rectum.

Dr. Prioleau: Does any member of the faculty care to discuss the case?

Dr. Cannon: According to the record, the patient only had a slight fever on several occasions during the first few months. If this had been a tuberculous peritonitis of a severe enough grade to give the extreme matting that is necessary for masses to be felt, one would certainly have expected more fever. And in the post-operative course we note that the fluid was accumulating very rapidly. This rapid filling is certainly not common or characteristic in tuberculosis. These two points seem to me to be definitely against the diagnosis of tuberculosis.

Dr. Johnson: The white, jelly-like stools noted in this case were doubtless mostly mucus, as is seen in the condition of mucous colitis.

While the fluid recovered from the abdomen is suggestive of tuberculosis, it is also quite consistent with carcinomatosis of a serous surface. The reddish discoloration of this fluid would seem to be especially significant, and to point towards carcinoma. The greenish color may have been due to old blood as well.

Dr. Prioleau: I cannot discuss this case in an unbiased manner, as I know the outcome of the autopsy. I did not have the case under my care on the ward except for the last few weeks of her life, and I was not present at operation.

Preoperatively there were many things to suggest tuberculous peritonitis: fever, fluid, matted intestines, etc.. But postoperatively the various developments point more towards carcinoma. As Dr. Johnson has pointed out, the fluid is somewhat more suggestive of carcinoma of the peritoneum than of tuberculosis. The mass seems to have been quite localized and limited to the pelvis. And the operative find-

ings are quite typical of carcinoma. Tuberculosis of the peritoneum is usually quite easy to recognize at operation. And the rapid accumulation of fluid post-operatively also points towards carcinoma, as pointed out by Dr. Cannon.

Suppose we diagnose the case as one of carcinoma, then; where will we say the tumor was? It would certainly be most unusual to get a carcinoma of the rectum or sigmoid as far advanced as this one must have been without more evidence of obstruction. In carcinoma of the cecum evidences of obstruction are commonly lacking, but the location of the mass makes that diagnosis unlikely. In addition, I believe that there is very little tendency for carcinoma of the large bowel to give rise to peritoneal implantation. Occasionally a carcinoma of the stomach is implanted in this manner, as in the Krukenberg tumor of the stomach which gives rise to bilateral ovarian metastases in many cases from spread downward over the peritoneal surfaces.

But the carcinoma which characteristically spreads in this manner is the carcinoma of the ovary. The marked matting of the intestines which occurs in this condition frequently gives rise to intestinal obstruction. The anemia can be explained on the basis of chronic intestinal obstruction, and occurs occasionally as a conspicuous feature in obstruction of the large bowel. The fever can be explained on a basis of degeneration and necrosis within the tumor.

Dr. Lynch: This woman had a carcinoma of the ovary, and I believe that it is possible to explain the whole case on the basis of that diagnosis. The tumor arose from the left ovary, spread itself by peritoneal implantation, giving rise to the peritoneal fluid, and, by means of the peritoneal adherence, to partial and intermittent intestinal obstruction. With a tumor of this duration, primary in the intestinal tract, there should certainly have been some indication of the tumor on the x-ray and there should have been more evidence of intestinal obstruction, as pointed out by Dr. Prioleau. But the usual course of carcinoma of the bowel is quite different: there is extension via the lymphatic channels, with lodgement in regional lymph glands, or extension via the veins, with metastatic nodules formed in the liver. Seldom is there extensive peritoneal implantation in car-

cinoma of the large bowel. Occasionally such implantation is seen in carcinoma of the stomach, as in the Krukenberg tumor, which is a mucous carcinoma of the stomach, tending to extend by peritoneal implantation onto pelvic structures. But such extensive peritoneal implantation is the expected and usual course in carcinoma of the ovary, especially in the papillary form. Just such a picture as this may develop in a case of papillary cystadenoma of the ovary, which tends to be malignant clinically altho usually benign histologically. In a young woman it would be logical to make a diagnosis of papillary cystadenoma, but in an elderly woman, papillary carcinoma of the ovary would be the more usual tumor.

The low-grade fever may have been due to a low-grade enteritis which is usually present from time to time in such cases, or it may have been due to the absorption of substances from the necrotic tumor itself. Apparently it was not based on any demonstrable infection.

It is still somewhat hard to explain the anemia; I imagine that was due to the low-grade intestinal obstruction which was easily demonstrated at autopsy. This would lead to frequent vomiting, and that to a tendency not to eat. The anemia would then be a nutritional anemia. This seems to be a better explanation than bone marrow metastasis, because metastasis would have to be very extensive to produce so severe an anemia. As a matter of fact there were no evidences of metastasis in any organs; the liver nodules noted at operation were on the capsule, not within the liver. Dissemination was widespread thruout the abdomen, but the tumor tissue involved only the surface of the organs sheathed in peritoneum.

The histological appearance (demonstrating microscopic sections) is quite typical of the usual papillary carcinoma of the ovary, as you can see here. You note an active invasion of the peritoneal surface of the different organs by active, atypical epithelial cells. These tend to arrange themselves in slender papillomatous projections, the spaces between villi being occupied by a serous or possibly a mucinous fluid. The ovary proper was almost completely replaced by this soft, moist type of tumor-cyst.

This case was presented because it shows



the typical clinical course of the usual carcinoma of the ovary, which serves to differentiate this

tumor from most other malignant neoplasms within the abdomen.

## EYE, EAR, NOSE AND THROAT

J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

### TRANSITORY WORD BLINDNESS ASSOCIATED WITH RIGHT HOMONYMOUS HEMIANOPIA

Dr. H. G. A. Gjessing, Arch. Ophthal., July, 1936, p-5

Dyslexia, or word blindness, is a peculiar psychic disturbance in which the patient is unable to read in spite of normal vision. It may be congenital or acquired. In the acquired variety he can understand the spoken language without difficulty.

The onset of Dyslexia may be very sudden. The etiology is diverse but the pathological changes are localized in the posterior portion of the outer and upper surface of the angular gyrus of the temporal lobe and the cartiguous portions of the occipital lobe. In right-handed persons it is located on the left gyrus angularis, *ceteris paribus*. Dr. Gjessing reports a case, in which the patient dictated a letter to his stenographer. On reading the letter he found that it contained numerous invectives. When read aloud by the stenographer it sounded as he had dictated it. And so it was with other words,—in the telephone directory for instance.

He was found to have a prostatic cancer of which he died, but with Pot. Iod., he improved so that he could read faultlessly. Dr. Gjessing goes into an interesting legal discussion:

"To me, the interesting feature is the peculiar way in which the dyslexia manifested itself. It seems fair to assume that the patient had a certain amount of ill feeling toward the person to whom the dictated letter was addressed. Under ordinary circumstances this ill feeling was suppressed and hidden beneath conventional polite phraseology. The patient's acute cerebral disturbance, however, interfered with his appreciation of certain word pictures, whereupon he promptly substituted the word images

of the invectives he had always been tempted to use:

Such a condition might give rise to legal problems, for instance: The patient writes a letter himself, by hand. He does not know anything about his own ailment, this having arisen shortly before. In his letter he writes invectives instead of polite phrases. Is he then judicially responsible for his blunder? Or the patient writes a letter to B. In his letter he mentions A, whom he abuses. In good faith B used the expressions about A. Who, then is the responsible party—the patient or B? The examples might be multiplied indefinitely.

Finally I want to mention that the considerable improvement in the patient's fields of vision may have been due to the fact that he was partially left-handed. As the homonymous hemianopia was right-sided he could hardly have been absolutely left-handed."

I had a patient with a similiar trouble. His trouble was a visual word or object blindness. He could write the word Charleston, for instance, without looking at what he was writing. If one pointed to a cow, for instance, and asked its name, he would call it a book, or a pencil, or any other word. He would misname objects in his store, but he knew the use of the objects. If, for instance, he was asked, what is this used for; handing him a pencil, he would use it to write with. I did not try him on any writing except the automatic writing of words without looking at them. I showed him before the medical society. He closed up his store and moved to Florida. I never heard what became of him.

#### NEW TEXT BOOK

The Eye and Its Diseases, by Berens (Saunders) is one of the outstanding books on its subject. Those who are familiar with the Text Book of Ophthalmology, by Fuch, will realize

the wealth of real knowledge Dr. Beren's book contains when I say that it is like Fuch's Textbook of Ophthalmology, made up to date. It has incorporated in it the results of modern investigators and thoughts. I think that it would be impossible to summarize it but I may try to do so sometime.

Those who have read Fuch's Textbook of Ophthalmology will know what I mean when I compare Dr. Beren's book with it. Those who have not read Fuch's Textbook of Ophthalmology will find it of interest to do, or better, to get Dr. Beren's book.

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## SURGERY

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WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

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### "TWO-STAGE AMPUTATION FOR DIABETIC GANGRENE OF LEG"

Surgery in order to be sound should be practiced upon a basis of physiology and pathology in their broadest senses. The mere knowledge of operative technic is not sufficient; it is a dangerous weapon in the hands of those whose training is lacking in other respects. Too often is the technic of an operation learned, and this operation applied without due consideration of the disease process being treated. For example—the technic of subtotal thyroidectomy is the same whether the patient has good cardiac reserve or decompensation. In the latter case an operation of such magnitude no matter how well performed, would often result in death. Also should the severity of the hyperthyroidism not be taken into account, a postoperative thyroid crisis may bring about a fatal result. Numerous other examples could be pointed out.

Another type of case, somewhat different, is that of amputation in diabetic gangrene. In these cases the mortality and incident of wound infection is very high. Dr. Edward F. Crossan of Philadelphia is of the opinion that this is in great part due to violating the well established principles of surgery. He advocates a method of treatment which he considers fundamentally sound. (*Am. J. Surg.*, XXXIII; 18 (July) '36).

In diabetic gangrene amputation is done in order to save life. To attempt to obtain primary healing or a well fashioned stump may

defeat this purpose as it is not basically sound surgery from a pathological standpoint. The tissues at the site of amputation have a deficient circulation and are in a state of poor nutrition. The putrid odor upon making the incision is evidence to this effect. The lymphatics contain bacteria which of necessity interfere with wound healing. The orthodox amputation with flap formation interferes with the circulation of the stump and opens tissue spaces. Closure of the layers interferes with drainage. The foregoing factors to a great extent are responsible for the high mortality, and the high incidence of infected wounds in these cases. These may be obviated as far as possible by guillotine amputation, without the use of a tourniquet—with no attempt at flap formation or closure. In this way the circulation of the stump is interfered with to a minimum; tissues spaces are not opened; and the maximum drainage is provided. Accordingly the tissues of the stump are in the most favorable condition to combat infection and heal without further gangrene formation.

Once the infection has subsided, the circulation re-established, and the diabetes is under control, a secondary closure may be performed. With conditions for healing more favorable a stump may be better fashioned according to the indications of the particular case. This method of treatment is not necessarily indicated in all cases. It is particularly applicable in the more severe ones.



## SOCIETY REPORTS

RESOLUTIONS ON THE DEATH OF  
DR. JAMES M. AUSTIN, COLUMBIA  
MEDICAL SOCIETY, JUNE 8, 1936

On the afternoon of Friday, April 24th, at five o'clock, the life of Dr. James Monroe Austin came to a quiet, peaceful close. Essential hypertension carried away this splendid fellow practitioner in the very prime of his life and in the flower of his usefulness. Although he had been aware of it for nearly five years, only his close friends knew that the shadow of this dread disease was upon him.

James Monroe Austin was born at Coronado, Greenwood County, South Carolina, on February 3, 1898. His father, Dr. J. D. Austin, was an old school family doctor, beloved by hundreds of patients and neighbors in Greenwood, Laurens and Spartanburg counties. His mother, a woman of rare charm and understanding, was Sally Franklin Clardy. Both parents were connected by ties of blood and marriage with the pioneer families of piedmont South Carolina.

When James was quite young the family removed to Clinton, where Dr. Austin established his practice and became attending physician to the Presbyterian College. The Austin home of those days was a place of open hospitality and a favorite rendezvous for the college students and the young people of Clinton and of Thornwell Orphanage. In the charming atmosphere of such a home, located in a Southern college town of a generation ago, James Austin grew up. By his companions at the Clinton High school he became affectionately known as "Sheep" and this name followed him throughout life among his intimates. After graduation from the high school, James entered Presbyterian College, where he was graduated in 1919—after serving his country during the World War. While in college he took an active part in athletics and student affairs, and was at one time all-state catcher on his alma mater's baseball team. He was also a valued member of the Presbyterian College Glee Club.

Following his graduation he became connected with the firm of Dillard and Dillard in Clin-

ton, where he worked several years, leaving them to accept the position of treasurer of the Medical College of the State of South Carolina. While serving in this capacity he married Miss Mary Clary of Gaffney, South Carolina. Deciding to take up his father's calling, he entered the Medical College in 1926 and received his degree in 1930, continuing all the while in his office as treasurer of the college.

Immediately after taking the State Board examinations, he became an interne at the South Carolina State Hospital, and after the completion of his internship joined its medical staff, serving with faithfulness and devotion until three days before his death. During their nearly six years residence in the hospital community, the Austins constituted a popular part of that community. In addition to his widow, two sons, James M., Jr., and Barney Clary, survive. The latter was an infant of three weeks when his father received his summons from the Beyond.

James Austin was a quiet, meditative man, but one who thoroughly enjoyed life. He loved baseball, played a weekly game of golf and was a familiar figure at the local wrestling matches. Yet he was deeply interested in the higher things of life. A member of the Baptist Church, he practiced his religion, not in discussing theology, but in doing good. His sweet tenor voice added to the harmony of the Church Choirs in Clinton, Charleston and Columbia. About a year before his death Dr. Austin identified himself with the Boy Scout movement, becoming a committeeman of Troop 20, sponsored by the First Baptist Church. He was a member of the Columbia Medical Society\* and the American Psychiatric Association. His fraternal orders were the Knights of Pythias and the Sigma Kappa Chapter of Phi Chi Medical Fraternity, of which he was a charter member. But more than organization, James Monroe Austin valued friendship, and his friends were legion—not the sudden, self-seeking intimacies of the congenital "mixer," but the deep-flowing loyalties that spring from spiritual kinship and years of association. And his devotion to charity was proverbial among

his colleagues at the State Hospital. There, in his chosen work as a psychiatrist, his life came to its full, though brief fruition. There he ministered tenderly to the mentally afflicted and no one grieved more sincerely at his passing than did these pathetic wards of society, among whom he labored so unselfishly.

THEREFORE, be it resolved:

FIRST: That the Columbia Medical Society, the State Hospital and the citizenry of Columbia and of South Carolina have lost a valued friend, a loyal colleague and a skillful and devoted worker and that our deep sympathy be extended the bereaved family;

SECOND: That a copy of these resolutions be spread upon the pages of the minute-book of the Columbia Medical Society;

THIRD: That a copy be sent to the family of Dr. Austin;

FOURTH: That copies be sent to the South Carolina Medical Journal and to the local daily papers.

CHAPMAN J. MILLING, M.D.

THOMAS A. PITTS, M.D.

SOL B. McLENDON, M.D.

\*Dr. Austin was also a member of the South Carolina Medical Association.

Adopted by the Columbia Medical Society with a rising vote.

BENJ. RUBINOWITZ,  
Secretary.

#### RIDGE MEDICAL SOCIETY

The Ridge Medical Society met at 7:30 o'clock Monday the twentieth of April in the usual meeting place with a good attendance though not so large as usual.

We had two visitors Dr. L. C. Shecut of Orangeburg and Dr. W. A. Whitlock of Aiken.

Dr. Ballinger presented some rare specimens of intestinal parasites with report of a case which elicited much interest.

He also reported a case of pregnancy and parturition with most unusual symptoms which recovered. Both cases were freely discussed.

Dr. W. P. Timmerman introduced Dr. L. C.

Shecut of Orangeburg, our essayist who after expressing his pleasure at being with us read a most interesting and instructive paper on Typhus Fever.

Dr. Asbill in discussing Dr. Shecut's paper emphasized the methods of the spread of the malady with special emphasis on the large distributing rat and his viciousness and gave methods for its extermination.

Dr. W. P. Timmerman discussed some of the features of typhus fever and reported two cases one of which terminated fatally. He discussed some of the unusual conditions and symptoms which he hadn't seen or heard of before.

Dr. Frontis called attention to the affections of the mouth, etc., which caused such variations in the oral and rectal temperatures.

The following were elected as officers for the ensuing year.

Dr. O. D. Garvin, President, Ridge Spring.

Dr. E. P. Taylor, Vice President, Batesburg.

Dr. P. A. Brunson, 1st Vice President, Ridge Spring.

Dr. J. N. Crafton, 2nd Vice President, Modoc, R. F. D.

Dr. W. P. Timmerman, Sec.-Treas., Batesburg.

The President was authorized to appoint all committees not otherwise ordered. Drs. W. W. King of Batesburg and F. G. Asbill of Ridge Spring were appointed an enlisting committee, and we confidently expect them to create greater interest in attendance.

Supper was served in The Rutland Hotel.

Drs. Crafton, Frontis and Timmerman attended the meeting of the State Medical Association.

The Ladies Auxiliary had an interesting meeting at Mrs. C. E. Ridgell's where Mrs. F. G. Asbill was assistant hostess.

Mrs. J. D. Waters and Mrs. W. P. Timmerman attended the state meeting of the Ladies Auxiliary of the S. C. Medical Association in Greenville and reported a most pleasant occasion.

W. P. Timmerman, M.D.,  
Secretary.



# MEDICAL SOCIETY OF SOUTH CAROLINA

Minutes of the Regular Meeting of the Medical Society of South Carolina, held Tuesday evening, April 28th, 1936, at 8:30 o'clock, at the Roper Hospital

The meeting was called to order by the President, Dr. W. A. Smith.

Roll Call. Present were: Drs. A. E. Baker, B. R. Baker, Beckman, Bowers, Buist, Buist, Jr., Burn, Cain, Cannon, Cathcart, Chamberlain, Deas, de Saussure, Evatt, Heidt, Hiott, Hope, Hoshall, Johnson, LaRoche, Lynch, McCrady, O'Driscoll, Pearlstine, Peery, Prioleau, J. J. Ravenel, W. J. Ravenel, R. B. Rhett, W. P. Rhett, Rudisill, Rutledge, Sams, Sanders, Scharlock, W. A. Smith, W. H. S. Speissegger, Steinberg, Taft, Waring, I. R. Wilson, Robert Wilson and Robert Wilson, Jr.

Guests were: Dr. Douglas Jennings, Bennettsville; Dr. Westcott Black, Beaufort; Dr. A. M. Lassek, Medical College.

The Minutes of the previous meeting were read and approved.

There was no business transacted at this meeting.

Dr. Robert Wilson suggested a report from the Delegation to the State Association meeting. The President instructed the Secretary to ask for a report from the Chairman at the next meeting.

The Scientific Program consisted of the following:

1. A Case Report by Dr. W. H. Prioleau on Intrapleural Pneumolysis.

This was discussed by Drs. J. J. Ravenel and W. A. Smith, and completed by Dr. Prioleau.

2. Dr. Douglas Jennings, Bennettsville, on "Some Interesting Experiences in Abdominal Surgery."

This paper was discussed by Drs. Cannon, Lynch and Cain, and the discussion was closed by Dr. Jennings.

The President then thanked Dr. Jennings for his paper and visit.

3. Dr. John C. Beckman, on "Erythromelalgia, Disease or Symptom Complex."

Discussion by Drs. Pearlstine, Prioleau, Hoshall and Robert Wilson followed.

Dr. Beckman closed the discussion.

The meeting then adjourned.

J. I. Waring, M.D., Secretary.



## WHY CAMP SUPPORTS ARE ACCURATELY FITTED

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## BOOK REVIEWS


**THE 1935 YEAR BOOK OF GENERAL MEDICINE.** Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., S.D., F.R.C.P., (Hon.) Edin, William B. Castle, M.D., A.M., William D. Stroud, M.D., George B. Eusterman, M.D. The Year Book Publishers, Incorporated, 304 South Dearborn Street, Chicago.

The main sections of this volume are edited by authors of national reputation, for instance infectious diseases by Dr. George F. Dick, diseases of the chest by Dr. Lawrason Brown, diseases of the blood by Drs. Minot and Castle, diseases of the heart by W. D. Stroud, the digestive system by George B. Eusterman. There are numerous illustrations throughout the book and like the volume on surgery has nearly a thousand pages covering the journals of the world.

**DISEASES OF THE RESPIRATORY TRACT.** Clinical Lectures of the Eighth Annual Graduate Fortnight of the New York Academy of Medicine: By 21 contributors. 418 pages with 56 illustrations. Philadelphia & London: 1936. Cloth, \$5.50 net.

This volume is a compilation of the lectures delivered before the New York Academy of Medicine in its 1935 post graduate course now becoming

a well known educational factor for a large number of physicians in many parts of the country. It is a book of over four hundred pages. The subjects taken up range from the simplest to the most complex. For instance the common cold is discussed by Dochez. The author gives the result of an extensive investigation. Progress has been made by the author and his co-workers but the problem is not yet solved. Then there is the subject of sinus disease from infancy to old age discussed by C. T. Porter. Pneumonia in its various forms come in for considerable attention. The Pneumonia in child-hood is presented by Charles Hendee Smith of Bellevue where a study has been made for ten years. The serum treatment in these cases has proved of value in types one and fourteen in infants. This is a hopeful procedure and is expected to play a larger part in future treatment. The author is certain that all treatments should be attended to around the feeding hour so that the patient may be disturbed as little as possible. Oxygen and transfusions have their place in the treatment. There are about twenty contributors in this volume, several being from great Universities outside of New York City. The general practitioner will find the book of practical value in his daily work.



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THE 1935 YEAR BOOK OF GENERAL SURGERY. Edited by Evarts A. Graham, A.B., M.D., Professor of Surgery, Washington University School of Medicine: Surgeon-in-Chief of the Barnes Hospital and of the Children's Hospital, St. Louis. The Year Book Publishers, incorporated, 304 South Dearborn Street, Chicago.

These year books provide for a resume of the world's literature. It is impossible for any doctor to comprehend all of the advances in surgery alone even in one year without some such epitomy as this book provides. This particular volume has eight hundred and thirty eight pages.

#### SURGICAL CLINICS OF NORTH AMERICA.

Issued serially, one number every other month. Volume 16, Number 1. Chicago Number—February 1936. 356 pages with 78 illustrations. Per Clinic year February 1936 to December 1936. Paper \$12.00; Cloth \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1936.

These clinics have now taken on the more practical aspect of bedside treatment. There is also a more definite plan of presenting certain phases of disease and remedial measures by concentrating on the symposium type of procedure. For instance, in this issue there is a symposium on cancer of the cervix giving a complete survey of the diagnosis and modern methods of treatment. There are of course many other interesting subjects treated in this volume. One of particular interest is by Bevan of Chicago on appendicitis. Excellent efforts have been made to standardize the management of a case of appendicitis but the mortality is yet much higher than it should be.

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# THE JOURNAL

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### PELLAGRA AND THE NEW DEAL\*

By

C. J. MILLING, M.D.

Columbia, S. C.

The work of Goldberger and his associates between the years 1914 and 1920 so firmly established the theory that pellagra was a disease due to dietary deficiency, that few serious efforts have since been made to disprove that proposition.

Probably the ablest contemporary opponents of this theory are Partlow and Tucker. Dr. W. D. Partlow, superintendent of the Alabama Insane Hospitals, believes pellagra to be an infection because of its regional distribution. He found it rare in Northern institutions in which the diet was practically identical to that of Southern institutions. He also observed that when first noted in this country it was more virulent than at the present time.(1)

Dr. B. R. Tucker, whose distinguished opinion cannot be lightly dismissed, believes that although vitamin deficiency is probably a contributing factor, the actual cause of the disease is a filterable virus which is probably allied to those of acute anterior poliomyelitis, influenza and herpes-zoster. He argues both from the regional incidence of the disease itself and from the distribution of the lesions in relation to peripheral innervation.(2)

In the papers cited, Tucker stresses the fact that pellagra reached its peak during the "fat" years previous to the depression and declined during the "lean" years which followed. With considerable justification he interprets this as

indicating that the disease is not primarily a matter of dietary deficiency. The above phenomenon, although here differently interpreted, was what led to the writing of this paper, as will presently be shown. But whether we insist that vitamin deficiency is the primary cause of the disease or merely a contributing factor, there can be no serious doubt as to its immense importance.

We are all, of course, familiar with the clinical manifestations of the disease and likewise with the equally well known environmental factors usually associated with its development. We expect to encounter it among the submerged, or at best, the marginal sections of the population. It is chiefly a disease of the textile operative and the tenant farmer or share-cropper.

There are, it is true, many individuals not covered by the above classification who, nevertheless, develop this disease. Among these may be mentioned the fastidious person who refuses to eat certain foods, thereby bringing about a nutritional unbalance. There is the chronic alcoholic who does not assimilate his food properly, even though he may eat more than enough. There is the psychotic individual who is either indifferent to all food or who uses no judgment in his choice. There is the food-faddist who has allowed some self-styled "professor" to persuade him that man's salvation is by bran alone.

Nevertheless, statistically speaking, all the above are of rare occurrence with the exception of the psychotic patient who develops pellagra as a secondary condition. This group is fairly common in all mental hospitals, the psychiatrist being all too familiar with the manic-depressives, schizophrenics, involuntions and others

\*Read before the Columbia Medical Society, June 8, 1936.



who have developed the disease upon the background of a primary mental disturbance.

But despite the occurrence of many such cases, it was the pellagrin per se who, in 1928, constituted 28.5 per cent of all admissions to the South Carolina State Hospital. It is this group to which the diagnosis, "Psychosis with Pellagra" is applied. This primary pellagrin is, as we have seen, drawn from an unfavorable environment, with negligible exceptions. He is the victim of undernourishment, particularly in regard to protein and vitamin deficiency.

In 1928 pellagra furnished one of the gravest problems confronting anyone attempting to treat mental disease. In that year the South Carolina State Hospital admitted 287 persons suffering from the disease and recorded 124 deaths due to its ravages. Of the latter 40 were white and 84 negroes, although admissions were almost equally distributed between the two races.

The next year witnessed little improvement, with eight more admissions and only three fewer deaths. Of the latter 50 were whites and 91 negroes. Nor were we at all encouraged when, in the autumn of 1929, the depression descended upon us. What prospects for statewide or sectional improvement might one expect in a disease whose very roots were supposed to spring from poverty.

Statistics for the following year (1930) are misleading, since they represent only nine months, a legislative act rendering necessary a change in the fiscal calendar. But it will be seen that the incidence of the disease was about the same, although the mortality was greatly decreased. During the nine months represented, 215 pellagrins were admitted and 71 died. Since the deaths were still recorded month by month it is possible, for purposes of comparison, to give the deaths for the calendar year of 1930, a total of only 87.

The figures for the next twelve month period, from September 30, 1930, to September 30, 1931, show 241 admissions and 80 deaths, of whom 13 are white and 67 colored.

By the following fiscal year, ending September 30, 1932, a sharp decline is noted in admissions as well as deaths. Of 129 admissions only 25 patients succumbed to the disease. Again, although racial distribution was about

equal, as represented by the admissions, the deaths were in the ratio of four colored to one white.

With the next year the fiscal calendar was again changed by legislative act and the figures given represent only nine months, or from September 30, 1932, to June 30, 1933. During this time a total of 90 pellagrins received admission and 26 pellagrins died.

Fortunately for the rest of the period under consideration the statistics have been compiled for twelve month periods, each ending June 30. The next such period, from June 30, 1933, to June 30, 1934, shows 59 admissions with 23 deaths, white admissions and colored deaths again led.

For the year ending June 30, 1935, the figures are 54 admissions and 20 deaths. This is the last year for which complete figures are available.

<i>Yr.</i>	<i>Ad.</i>	<i>Died</i>	<i>Remarks</i>
1925	67	37	
1926	110	68	
1927	184	91	
1928	287	124	
1929	295	121	
1930	215	71	(January thru September)
1931	241	80	(Sept. 1930, thru Sept. 1931)
1932	129	25	(Sept. 1931, thru Sept. 1932)
1933	90	26	(Oct. 1932, thru June 1935)
1934	59	23	(July 1933, thru June 1934)
1935	54	20	(July 1934, thru June 1935)

The above figures are, I believe, rather significant, in that, while taken from a group, they constitute a fairly accurate cross-section of the general population of the State of South Carolina. For purposes of comparison, let me quote a few figures obtained from the State Board of Health, through the courtesy of Drs. James A. Hayne and Martin B. Woodward. The year by year incidence of the disease within this larger group, exhibits, as will become apparent, considerable similarity to that within the smaller group. In both instances it will be noted that 1928 and 1929 are peak years for deaths, though for morbidity 1930 is ahead of 1928 in the State Board's figures.

PELLAGRA STATISTICS FOR SOUTH CAROLINA  
1925-1935 State Board

<i>Year</i>	<i>Reported</i>	<i>Died</i>	<i>Remarks</i>
1925		408	
1926	3053	529	
1927	4626	732	
1928	6409	937	
1929	7849	909	
1930	7311	613	(Nine months period)
1931	4827	637	
1932	3389	415	
1933	2489	353	
1934	1724	292	
1935	1991	310	

In relation to the above figures Dr. Woodward writes: "Unfortunately there was some change in the fiscal year in 1930 and again in 1933, so that there appears to be a certain overlapping in the periods covered. Nevertheless, I think it clearly evident that there has been a striking decrease in the number of cases during this eleven-year period."

After reviewing the figures above quoted it seemed desirable to obtain the statistics for the previous decade for purposes of comparison. The State Board again cooperated by furnishing its mortality figures, which are given in the following table. No morbidity figures were kept at that time. It will be noted, however, that most of these are for ten month periods, only two being twelve month periods and one eleven month. Nevertheless, it is very apparent that in 1915 there was an enormous number of deaths due to pellagra, the rate declining about 60 per cent the next year. Except for a few minor rises, it gradually goes down from 1916 to 1925, when there is another sharp rise, but nothing to compare with the figure for 1915, the first year statistics were kept by the State Board.

Again these figures bear a close resemblance to those of the State Hospital, whose complete statistics are presented below. Following the independent discovery of the disease at the South Carolina State Hospital in 1908, a state-wide conference was held, followed by a national conference in 1909. Monthly figures are available from 1908 for the State Hospital, showing that by 1910 the disease had reached epidemic proportions. 1914 and 1915 were the

peak years with the remarkable drop, already noted, in 1916. With regard to this drop Dr. Woodward writes:

"Between 1912 and 1915 an extensive Educational Campaign was used with the result of better diagnosis being made. This, together with the fact that by 1915 the so-called epidemic was probably on the wane, explains why there was such a drop of the deaths from 1915 to 1916."

ADMISSIONS AND DEATHS DURING FISCAL YEAR  
STATE HOSPITAL

<i>Year.</i>	<i>White Adm.</i>	<i>White Died.</i>	<i>Col. Adm.</i>	<i>Col. Died.</i>	<i>Total Adm.</i>	<i>Total Died.</i>
1908		4		29		33
1909		16		52		68
1910		26		80		106
1911		50		110		160
1912		95		133		228
1913		66		99		165
1914		136		220		356
1915		96		231		327
1916	108	59	100	82	208	141
1917	101	45	73	67	174	112
1918	87	59	56	66	143	125
1919	34	19	28	24	62	43
1920	21	15	62	14	83	29
1921	39	15	54	39	93	54
1922	45	17	54	38	99	55
1923	39	23	61	45	100	68
1924	34	16	48	54	82	70
1925	48	21	19	16	67	39
1926	67	29	43	39	110	68
1927	107	34	77	57	184	91
1928	145	40	142	84	287	124
1929	149	30	146	91	295	121
1930	97	17	118	54	215	71
1931	121	13	120	67	241	80
1932	63	5	66	20	129	25
1933	55	10	35	16	90	26
1934	37	7	22	16	59	23
1935	33	9	21	11	54	20

*Remarks*

1908	No figures available for admissions
1928	28.5 per cent of total causes of death
1929	28.47 per cent of total causes of death
1930	First nine months
1933	First six months



PELLAGRA STATISTICS FOR STATE OF SOUTH  
CAROLINA BOARD OF HEALTH

*Year. Reported. Died.*

1915	1379	January-November
1916	553	January-October
1917	544	January-October
1918	558	January-October
1919	359	January-December
1920	219	January-October
1921	260	January-October
1922	319	January-October
1923	267	January-October
1924	275	January-October
1925	408	January-December
1926	3053	529 January-December
1927	4626	732 January-December
1928	6409	937 January-December
1929	7844	909 January-December
1930	7311	613 Jan.-Sept. 9 mos. period
1931	4827	637 January-December
1932	3389	415 Oct. 1, 1931-Sept. 30, 1932
1933	2489	353 July 1, 1932-June 30, 1933
1934	1724	292 July 1, 1933-June 30, 1934
1935	1991	310 July 1, 1934-June 30, 1935

Now the feature of interest in these figures lies chiefly, as I see it, in the fact that this disease, in which we would have expected a marked increase, has shown a steady decline during the very worst depression years.

This phenomenon is by no means confined to our own State. Reece called our attention a year ago to the fact that 1928 was the peak year for pellagra in Alabama, Kentucky, Mississippi and South Carolina, whereas Virginia, Louisiana, Georgia and Florida reached their worst year in 1929. He attributes this fact in part to the floods of 1927 which affected Arkansas, Tennessee, Mississippi and Louisiana.(3) This, however, would not account for the increase in South Carolina. The same observer noted the universal decline beginning in 1930.

For the entire registration area the death rate per 100,000 was 5.0 in 1927, 6.1 in 1928, 5.8 in 1929, 5.3 in 1930, 4.3 in 1931 and 3.1 in 1924.(4)

In attempting to account for this decline during the depression years many factors have to be considered, among which may be mentioned general educational enlightenment, pub-

lic health propaganda and the widespread adoption of brewers' yeast both as a preventive and a therapeutic measure.

Another element of undoubted importance is the greater dependence of man upon the soil in times of industrial insecurity. Many families who formerly depended upon textile work alone found time in the slack years to grow a garden or care for a cow. Though their clothes might suffer, their stomachs benefited.

But to this observer, at least, it does not seem apparent that the factors discussed above are sufficient to account for the sharp drop in 1932. It is worthy of note that this is the year during which that social and political upheaval known as the New Deal came into being.\* A precipitous decline in the pellagra figures was immediate. Is it not, therefore, reasonable to conclude that, in the free distribution of foodstuff, the creation of new jobs under the various government relief agencies, the CCC camps and the direct relief afforded by the administration, that we have the answer? I think that the figures show too close a relation to the New Deal for us to disregard them. It is true that 1928 and 1929, the worst pellagra years, were the period when two cars were supposed to repose in every garage and a chicken in every pot, but they were also the years when money crops were raised to the exclusion of food crops and when earnings went not into intelligently selected food but into vacuum cleaners and radio sets.

That the decline, already begun in 1930, was tremendously accelerated by the New Deal, seems indicated by the comparative death rates from 1927 through 1932 in the neighboring commonwealths of North Carolina and Mississippi, both typical pellagra states.

<i>Year.</i>	<i>North Carolina.</i>	<i>Mississippi.</i>
1927	22.8	35.4
1928	28.0	38.0
1929	30.4	36.6
1930	31.2	28.5
1931	21.5	26.6
1932	15.0	15.0

\*While it is true that the various relief agencies did not go into effect until 1933, the New Deal really began with the 1932 elections.

This paper is not intended in any sense as a commentary upon the New Deal. I have no quarrel whatever with those who may think certain of its activities unconstitutional or unwise. My purpose is merely to call attention to a scientific fact and to place upon it my honest interpretation. That interpretation is that pellagra, already on the wane after 1929, received a staggering blow as a result of the government's effort to provide the forgotten man with the necessities of life.

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#### SCREW WORM INFESTATION

By

W. R. WALLACE, M.D.  
Chester, S. C.

Screw worm infestation in South Carolina is principally a problem for the veterinarian and the economist. But here, as in other new territory which it has invaded, there are enough cases of human infestation to demand the attention of the medical profession.

This pest has been known in the Central American countries for many years and from there it spread up into the great southwest of our country. In the last few years it has traveled along the gulf states and up the Atlantic Coastal region. In 1934 the farthest north a case of animal infestation reported in this

section was near Ridgeway, S. C. In 1935 cases were being reported around Fayetteville, N. C. The spread will continue northward until climatic conditions become unfavorable for its cycle of development.

There is a notion that the big influx of cattle into South Carolina in 1934 from the scorched plains of the west is the cause of its rapid appearance over the state. But this is not the case. A veterinarian, who inspected thousands of these cattle, injured during the hot weather by shipping accident, said he did not see a single case of screw worm infestation. So this is one misfortune that can't be laid at the door of the "New Deal."

The eggs of screw worm are laid by a certain fly (*Cochliomyia americana*) which belongs to the blow fly family. It is bluish green with three stripes along the back between the wings and with a yellowish red face. This fly deposits great numbers of yellowish eggs in irregular masses on the edge of cuts, abrasions, blood spots or wounds of any kind. With favorable temperature these eggs will hatch in the remarkably short time of twelve to fourteen hours. The young worms promptly begin to penetrate the tissues causing pain and a sero-sanguineous discharge of a most disagreeable cadaverous odor. In young animals these eggs are sometimes deposited around the navel or sometimes around the teeth as well as in all sorts of artificial wounds. In the human they are sometimes deposited in the nose where there is a nasal discharge or some small ulcer. These worms grow rapidly and reach about the length of 1-2 to 3-4 of an inch. After four or five days the adult worms drop out of the wound and bury in the ground and after a few days there emerge as the fly which soon mates and more eggs are deposited.

There is very little likelihood of an infestation in a normal vigorous person but in childhood or old age or the debilitated where deep sleep or stupor dulls the sensibilities. The person with cancer, old ulcers or osteomyelitis on the exposed areas of the body, who are unprotected during sleep furnish an inviting field. The child with impetigo is also susceptible under the same condition.

As the young worms begin their penetration and destruction of live tissue there is produced



a burning, pinching pain and characteristic wine colored sero-sanguineous discharge and characteristic odor, referred to as cadaverous.

The animal or person quickly takes on a septic or "sick" appearance and usually results in death if not given proper attention. In the human there is a considerable rise in temperature and increase of leucocytes and chilly sensations as would be expected in such toxic wounds.

One thing peculiar about this worm is that it does not bury itself completely in the tissue and therefore it is very seldom that enlargement or cutting is necessary in treatment. They crater out the wound by destruction of tissue always eating in with the sharp or pointed end, which has two strong rather powerful hooks or jaws which aid in tearing the tissue. The blunt or rear end remain in contact with air, as the breathing apparatus is situated there and appears as two brownish plates. The worms lie usually side by side, arranged somewhat analogous to cavities in honey comb. There seems to be a slight rotary motion as the worms busy them-selves with their destructive feeding. Their motility is due to the circular spine around the body which are similiar to the thread on screws and from which it gets its characteristic name.

The symptoms are so characteristic that when this condition is placed on your ever-increasing list of probable diagnoses, a correct diagnosis is very easy. In easily accessible wounds the worms are readily seen. In the nasal cavity when they develop rather high up the view may be obscured by partially dried secretion. After a cleansing solution the nasal speculum brings them well in view.

The prophylaxis depends on the proper protection of all wounds from the possibility of contact from flies and proper screening of young, old and debilitated especially during sleep. Also measures should be taken to control the development of flies by destruction of worms removed from wounds and the burning of all animals who die as the result of infestation.

The treatment is also rather simple. It consist of mopping away the secretions with gauze or cotton, cleansing with peroxide of hydrogen and irrigating with Boric acid solution or 1 to

2000 potassium permanganate solution. This is done to reduce the disagreeable odor and to remove the secretions which attracts the flies and encourage another deposit of eggs. Most of all these measures are carried out so that the real destructive agent can be applied. Two very effective agents are had in chloroform and benzol, the latter being in more universal use. The wound is lightly packed with gauze saturated with benzol so that the fumes are inhaled by the insects. The inhaled fumes are equally as effective as actual contact of the drug with the insects.

Briefly the patient that prompted this presentation was a farmer 72 years old who lived in an unscreened house and who during the summer took naps at the noon hour either on the porch of his house or on the ground in the shade of the trees. He said he had had "catarrh" for quite a while, otherwise no disability. Was somewhat debilitated on account of age and a rather limited food supply. Five days before seen felt chilly and a little weak. He noticed that his accustomed exercise tired him, thought he had some fever. Noticed a little bloody discharge and which he thought was nose bleed and it was for the last condition that he sought relief. The first impression was a malignancy of the nasal structures. After some Ephedrin solution was dropped into the nose to constrict the tissues and stop the oozing, the worms were brought into view. The nose seemed packed with worms lying side by side. A few worms were dislodged. The following day benzol was instilled into the nose and very readily 20 worms were blown out. For several days following, the nares were lightly packed with gauze saturated with benzol and over 200 worms were gotten out of right side of nose. There was no infestation on left side. During this time efforts were made to have him hospitalized which was finally done after several days delay but no worms found after admission to hospital. There was a great deal of destruction of mucuous membrane over septum, turbinates, etc. With irrigations of saturated boric acid solution and instillation of 100 per cent neo silvol solution the wound granulated as rapidly as could be expected. He was discharged after three weeks stay in hospital in a fairly satisfactory condition.

## DISCUSSION

Dr. E. A. Hines, Secretary, Seneca:

Dr. Wallace was kind enough to give me a copy of his paper a few moments ago to look over. It is obvious to you that I do not know anything about the real subject presented. The Program Committee, however, looked upon this paper as being one of the most important that we have at this session, and I believe that you will think so, too. Dr. Wallace does not appear upon our program often, but he is a real investigator, and every time he appears he makes a real contribution. He was one of the first to make a study of pellagra in South Carolina, one of the first states in the Union where extensive research on this disease was made. Dr. Wallace presented an epoch-making contribution a few years ago on tularemia, being one of the first in this country to do so. Now he appears with another paper of which I know you will be proud. Dr. Wallace is also a true physician, for he has his mind always on preventive measures.

He has been thinking of the vast number of people who may be affected by this infestation—first, the children; second, the aged; third, the feeble.

Dr. W. P. Timmerman, Batesburg:

I should like to mention the fact that Dr. Wise, of Saluda, several months ago presented a case similar to that of Dr. Wallace. Dr. Wise, through his timidity, did not write it but presented it orally to the local medical society.

I wish to congratulate Dr. Wallace.

Dr. James A. Hayne, State Health Officer, Columbia:

I simply wish to call to the attention of the medical men in that State that we have something in the State that we have had no record of having before up to last year—that is, fatal infestation of a human being by screw-worm larvae. In looking over my records I found eight cases of fatal screw-worm infestation. Now, remember that last year was the first year that screw worm made its appearance among animals to any great extent. We have, as you know, the black blow-fly, we have the green blow-fly, and we have this screw-worm blow-fly. Very characteristic of this fly is that it has a red head. The other flies that you know do not have red heads, neither the common-house-fly nor the green blow-fly nor the black blow-fly. This fly has three white stripes on its back. It will lay its eggs whenever it can find fresh blood, and it will come from a long distance to find fresh blood. It has been likened to the buzzard, which may not have been seen at all until carrion appears, when it is seen coming down out of the empyrean blue. The danger to human beings is the rapidity with which this fly lays its eggs. This screw fly lays its eggs rapidly, one after another. The egg hatches within four hours, under favorable circumstances, after being laid, and develops a maggot or screw worm, which very rapidly increases in

size and in less than five days becomes a pupa and drops out of the wound. The fly can lay from 255 to 300 eggs.

The worms may not be seen in the cavity unless you look for them. In the case reported by Dr. Wallace he did not suspect screw worm, and had no idea it was there. He looked within the nostril of the patient with a flashlight, saw the movement there, and thought it was the pulsation of the artery. I mention that because we might not think to look for screw-worm infestation. Of course, the treatment is easy; 90-per-cent commercial benzol is applied to the wound, then apply a pledget of cotton or gauze.

The prevention of screw-worm infestation is simple, of course. Paint fresh wounds with pine oil. The odor of the pine oil repels the fly.

The cases of this infestation are easy to find if we look for it, but we shall not find it unless we look for it.

I live on a farm and have eleven hogs, three calves and one goat on the place infested with screw worm. The calves were infested at the umbilicus; the hogs were infested when castrated. Now, in the West they do not have hogs castrated and do not allow cows to have calves from May until heavy frost, because they know the animals will be infested in that way. It is a fatal disease for animals because of the weakness from infestation and the toxemia produced from entrance of the worms in great numbers.

Dr. Wallace, closing the discussion:

I have nothing further to say except that I appreciate the discussion by these gentlemen. I simply wish to say that if the little effort I put forward in the preparation of this paper aids in the prevention of one single case of this infestation or in the cure of one case of this horrible condition I shall feel amply repaid.

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## TYPHUS FEVER

By

L. C. SHECUT, M.D.  
Orangeburg, S. C.

Typhus fever is a member of a family of maladies which are grouped together under the name of Rickettsia diseases. The name was given in honor of Ricketts, an American, who died of typhus while studying the disease in Mexico City. The particular variety which is responsible for typhus is called "Rickettsiae Prowaceki" adding the name of Prowacek, an Austrian who died in the same manner. These minute bacillus like things acquired their first parasitism on insects. Similar organisms in-

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Read before the Ridge Medical Society, Batesburg, S. C., April 20, 1936.



capable of producing disease in man have been found in a variety of insects. Parasites of this order have been found in sheep lice, in dust lice, bedbugs, mosquitoes, mites and ticks. The Rickettsiae needed a name for themselves because they could not be logically grouped with either the bacteria or with the protozoa. Now it seems that the two hosts involved in giving typhus to man are the louse and the rat flea on which are parasitic the Rickettsia. The infected louse dies within two weeks; but the infected rat flea gets rid of the parasite in a month or two and recovers. If one or more of these infected fleas or lice feed on man, they transmit typhus fever. The louse is the more dangerous and causes Epidemic Typhus because it stays with its host so persistently until it (the louse) dies. While a flea does hop away at times, Epidemic Typhus fever, as seen along the Southeastern Coast is known as Brill's disease. Brill first described it in 1898 among the Jews of New York. He thought it was a new disease but it was later proven to be true typhus brought to this country by immigrants from Southeastern Europe who had previously had the disease, some even in childhood and in whom the virus had lain dormant for years and then had another attack or recrudescence, which would under conditions of louse or flea infestation spread the disease.

The fifteenth century is as far back as typhus fever can be authentically traced, altho it may have existed for thousands of years and may have been among the many epidemics of the remote past which killed millions and were known as plagues. And just to think that most of the work in discovering the facts about typhus has been done since 1928, and some of the most recent investigations are not yet in print.

Now the prevalence of this disease in our own section of the country may be noted by the comparison of the number of cases reported in other sections. There were 528 cases in New York City and Boston from 1900 to 1930. In South Carolina 1927-1935—9 years—259 cases. In 1933 there were reported in Georgia 637 cases.

During the world war I witnessed the delousing processes on soldiers and clothing but was surprised to recently read a report of the

typhus situation on the far Eastern front. It said typhus began in the Serbian Army. There were less than 400 doctors in the Country, almost all of whom contracted the disease and 126 died. The new cases per day ran into many thousands—2500 were admitted daily to the military hospitals alone. In less than 6 months over 150,000 people died of typhus. This was in 1914. The Serbs had 60,000 Austrian prisoners and one half died from typhus. In Russia the prevalence and ravages of typhus during the war reads like medieval history. During the war and until 1921 there were no less than 30 million cases of typhus with three million deaths in Soviet Russian territory. The remarkable thing is the total absence of typhus from the Western front. Extraordinary sanitary measures, bathing and delousing in the Allied as well as the German armies must be given the credit. The Germans would not transfer their troops from the Eastern front to the Western front for fear of bringing typhus which they knew would cause them to lose the war.

My interest in this disease was aroused by the fact that I had under my care this year 4 cases at one time, the 4th case going down with his invasion about one month after the first case started. Two cases were in the same household, husband and wife. The wife going to bed about two and a half weeks after the husband's invasion. The third case was in the City limits but widely separated and no contact. The 4th case was in the Southern section of the town and no known contact with the other cases. These cases were diagnosed finally as Brill's disease or Endemic Typhus Fever.

The first case I diagnosed as Influenza and waited for the usual symptoms to develop to confirm the tentative diagnosis. These symptoms did not develop. The patient was apparently very ill and I watched him closely. In my routine examination on the fifth day I observed a macular rash over his chest and arms and abdomen which looked very much like rose spots and on pressure they would fade and return. The blood tests were negative to typhoid and paratyphoid. I remembered two years previously having seen at the same time two cases which had a similar rash and similar course of clinical symptoms which I

diagnosed as Typhus Fever. Both cases were connected with Feed Stuff Stores and I was told at the time by a Public Health Expert that we could always connect these few Endemic cases with such a contact. My impression at that time was that the disease was produced by the bite of the infected fleas from the Norwegian wharf rat and that this flea was transferred in the feed stuff in interstate commerce. Now I am told that the final step forward in the etiology of this disease as made by the United States Public Health Service, is that there exists in nature a permanent rodent reservoir for Endemic Typhus Fever in the rat and that the disease is transmitted to man thru the feces of infected rat fleas. As the flea bites he at the same time defecates. The person in rubbing the flea bite inoculates himself with the infected feces. This to my mind is the only way to explain my four cases.

From all historical accounts old world Epidemic Typhus Fever was a terrible scourge. In old English History during Tudor times there were great epidemics of typhus fever and it was then considered to be a disease of filth, war and misery. One historian (McLaurin) says probably if we could get at the real truth, throughout recorded history that Typhus had slain more people than any other Epidemic disease. It was then spoken of as the "Sweating sickness." It seems to have begun with the war of the roses and when Henry VII returned to London in triumph after the battle of Bosworth with his Typhus infected army and it's millions of fleas and rats the disease spread among the over crowded houses of the capital and high and low perished alike. Nobody seemed immune. In one week it took two Lord Mayors and six Aldermen and the Ancient University of Oxford closed it's doors and professors and students alike fled in common terror.

Sir William Osler in his 1910 edition of Practice of Medicine says Typhus Fever is an acute infectious disease of unknown origin. He quotes Hirsch as saying, "The History of Typhus is written in those dark pages of the world's history which tells of the grievous visitations of mankind by war, famine and misery of every kind." In England in 1875 there were one thousand four hundred and ninety nine

deaths, in 1895 only 58 deaths. In 1897 there were only three cases of Typhus Fever in the London Fever Hospitals. Still Osler in his time considered it a highly contagious disease, stating that among 1230 physicians attached to institutions in Ireland 550 succumbed to this disease. Medical science has achieved a triumph in the disappearance of the epidemic form in most countries and in the intensity of the symptoms and the reduced mortality. All this improvement evidently due to better sanitation and a correct knowledge of the source of infection.

During the time that I was treating these four cases, I was very fortunate to receive a reprint from the Georgia Medical Association Journal by Dr. Mark S. Dougherty, Jr., of Atlanta, Ga. on Endemic Typhus Fever in Georgia. He says a review made of the charts of all patients dismissed from the hospitals in Atlanta with the diagnosis of Typhus fever from 1925 to January 1, 1934, shows the number to be 69. Of this number nine cases were doubtful and not included in his study. In 1933 six hundred and thirty seven cases were reported in Georgia. The disease seems to be more prevalent along the Coastal Country and radiate from port towns. For a five year period Atlanta reported 96 cases and Savannah, Ga., 339 cases. My four cases followed so closely the usual clinical course of the disease that I will not report the cases separately but will mention only the general course and any special developments. None of my cases were in the hospitals and I had to depend on home nursing and no regular records were kept, by a professional nurse. Only one case complained of prodromal symptoms and he said he had suffered headache and backache and general malaise for about a week. In all the cases the onset was sudden with a rapidly rising fever, chills, severe headache and some nausea. The headache was the most complained of symptom. In one of my cases it was so severe that I had to eliminate the thought of meningitis. Medicines don't seem to give much relief for this headache. All cases showed a complete anorexia. There was great prostration, insomnia and nervousness. One case had profuse sweats and I left off all antipyretics but I found these did not cause them but they were due to the disease. When the epidemic type was rampant



in England they called it the "English Sweat." The temperature reaches it's height about the 5th day. All cases showed a temperature of 104 degrees at some time during illness. The temperature would vary one to three degrees during 24 hours. Would run around 101 1-2 in the morning and then 103 1-2 to 104 in the afternoon. The rash is the most distinctive thing about the disease. It comes out from 4th to the 6th day and lasts several days. It shows up first on the lower chest and abdomen and then on the back. If the skin is hot it shows better. Some of it will fade away if the room is cold and the cover removed for examination. It spreads to the shoulder and inner surface of the arms and thighs. The rash consists of rose to dull red macules. One of my cases, the female, had a peculiar form of the rash which I could only find described in Osler's work. On the fifth day I could see it plainly under the skin just like looking through a film of oil and I promised her the rash would be out next day. It never did show up any plainer. Osler described this rash when he said it had the appearance of a "fine, irregular, dusky red mottling as if below the surface of the skin, some little distance, and seen through a semi-opaque medium." My first case had been free of fever three days when he was taken with severe pains in his left leg and suffered all night. He reported to me next morning that he had suffered with "Cholly Hoss." On examination I found that he had suffered a thrombus and was kept in bed several weeks longer by this complication. One patient, third case, was normal three days and then suffered a relapse that lasted about one week. The fever lasted in all four cases 14 days and all came down by lysis.

The Weil-Felix test was negative in all cases on first specimens of blood sent to the laboratory. Later in the disease I got a positive report in two of the cases in dilutions -1-50, 1-100-1-200-1-400. In the other two cases I sent the second specimen and it came back negative. This agglutination test is not of much aid in diagnosis unless made daily, as it may be negative one day and completely positive the next day. The cases that were negative to the test had the same clinical course and symptoms and the same disease that the two

positive cases had. When the fever left the patients they felt better and convalescence was rapid in the uncomplicated cases.

Endemic Typhus occurs sporadically. The mortality is 1 to 4 per cent. It is not connected with filth or over-crowding and no respecter of persons or social status. Incubation period 7 to 14 days. It is claimed now that there is no evidence that it spreads from man to man. There are several contagious and infectious diseases with rashes from which it is necessary to differentiate. As all the books give a complete list of these I will not burden you. The main things for us, as Doctors, is to know that we have this disease with us yearly and be on the alert to recognize it, and as men with two eyes and a brain behind them to see if we can ferret out the information that may help to prevent the disease entirely.

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#### THE SIMPLIFIED KETOGENIC DIET IN THE TREATMENT OF BACILLI INFECTION OF THE URINARY TRACT IN GENERAL PRACTICE

By

J. H. CUTCHIN, M.D.

Easley, S. C.

This subject is nothing new, but the object of this paper is to present a method by which a treatment of bacilli infections of the urinary tract can be carried out in general practice, and to show the simplicity of the treatment, so that it may be carried out in one's office.

It is offered as a relief for a great army of patients who suffer from these infections and who have not got relief from the usual methods of treatment.

We may consider that around eighty percent of all urinary infections are due to the colon bacilli(1) (Crane). This treatment is not intended to replace the surgical treatment of perinephric abscesses, obstructions of the ureter, or calculi, although some men have claimed to get relief by the use of this diet in certain cases pyelonephritis and infections caused by the presence of calculi.(2)

This diet is primarily intended for adults,

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Read by title before the South Carolina Medical Association, Greenville, S. C., April 22, 1936.

but can be used in cases of children with pyelitis or cystitis.

The diet may be prescribed without detailed dietetic knowledge by the physician and can be prepared in the average home without special dietetic supervision.

The menus are so arranged that regardless of the items collected from the different groups, the daily intake of food will consist of carbohydrates, 15 to 20 grams; proteins, 35 to 50 grams; and fats, 300 to 325 grams. The vitamin deficiency need not be considered here as the patient is only kept on the diet for a short time. The menu also instructs the patient in detail how to choose his diet, and any patient of average intelligence can follow it.

The detailed chemical changes which this diet covers will not be discussed, owing to the limited time, but two conditions must be present in order that we get the best results with its use. First, sufficient concentration of ketone bodies, second, coincidental with this, an acidity of the urine of a pH. of below 5.3, as the successful use of the ketogenic diet is dependent on the bacteriostatic or bactericidal action of beta-oxybutyric acid at a certain degree of acidity.

Let us now look at the diet that will produce this ketosis. I will not read the entire diet, but will name a diet for one day, in order to show the type used. A copy must be given to each patient, so that he may work it out. The diet is as follows:

### *The Simplified Ketogenic Diet*

#### GROUP A—EGG DISHES

- 1 Egg nog  
Egg—1  
Cream (40 per cent fat)—6 tablespoons  
Water—5 tablespoons  
Nutmeg—to taste
- 2 Scrambled eggs  
Eggs—2  
Cream (40 per cent fat)—7 tablespoons  
Butter—3 teaspoons
- 3 Egg omelet  
Eggs—2  
Cream (40 per cent fat)—7 tablespoons  
Butter—3 teaspoons

- 4 Egg custard  
Eggs—2  
Egg yolk—1  
Cream (40 per cent fat)—7 tablespoons  
Vanilla—few drops

#### GROUP B—SALADS

- 1 Lettuce salad  
Lettuce—1-8 head  
Mayonnaise—4 tablespoons
- 2 Lettuce and tomato  
Lettuce—1-8 head  
Tomato—1 small  
Hardboiled egg—1 yolk  
Mayonnaise—5 tablespoons
- 3 Combination  
Lettuce—few leaves  
Celery—2 hearts  
American cheese (grated)—2 tablespoons  
Mayonnaise—4 tablespoons
- 4 Asparagus  
Asparagus—6 stalks  
Lettuce—few leaves  
Mayonnaise—4 tablespoons
- 5 Egg salad  
Lettuce—few leaves  
Egg (deviled)—1  
Mayonnaise—4 tablespoons

#### GROUP C—CREAM DESSERTS

- 1 Bavarian Cream  
Gelatin—1 teaspoon  
Cream (40 per cent fat)—7 tablespoons  
Whip the cream. Soak the gelatin in 1 teaspoon of cold water. Dissolve in 2 teaspoons of hot water. Add 2 drops of any flavoring. When cooled, add to cream. Place in mold and chill.
- 2 Gelatin  
Make plain gelatin as in No. 1. Use 7 tablespoons of unsweetened whipped cream over it.
- 3 7 tablespoons of whipped cream, with or without flavoring.

#### GROUP D—BEVERAGES

Tea, coffee, or water, with 4 tablespoons of cream. If desired, this amount of cream may be used with two cups of beverage. Use no sugar or milk.



## DAILY MENU

## Breakfast—

1. Choice from Group A.
2. One choice from Group D.
3. 8 slices of thin, crisp bacon, or 4 tablespoons of cream (40 per cent fat).

## Dinner and Supper—

1. One choice from Group B.
2. One choice from Group A or C.
3. One choice from Group D.

## DIRECTIONS

1. Satisfactory results cannot be obtained unless this diet is followed as outlined. Even the smallest deviations may ruin the chance for success.

2. No food or beverage other than that listed may be taken.

3. Water may be taken in moderate quantities, as desired.

4. The chewing of gum or tobacco is not permitted.

5. No laxative other than that prescribed by the physician is to be taken.

6. Do not take any medicine other than that prescribed by the physician.

In the majority of cases a ketosis will develop in three to five days and the patient who develops a ketosis quickly will be more benefited than the one who develops it slowly. In those cases that do not develop a ketosis quickly, a glass of 40 per cent cream may be taken between meals; then if the patient does not develop the ketosis, you may suspect that he is not carrying out the diet.

Some patients will have a certain amount of nausea and a feeling of weakness while on the diet, but this is to be expected in some cases. Normal work and exercise may be carried out during the treatment. Water is not forced, but a moderate amount may be taken.

Several tests have to be run each day. First, daily tests of the urine for evidence of the ketosis, which is based on the test of diacetic acid in the urine. The test is run as follows: to an equal part of 10 per cent aqueous solution of ferric chloride add the same amount of the patient's urine. If a ketosis is present, a portwine color will result. The second test, which should be run, is to determine the ph value of the urine, which should be below 5.5, but I

have seen cases in which the ph was higher and still an improvement was noted. In order to determine the ph value of urine, a method is used which can be done in the office. To twenty drops of the patient's urine, add one drop of 0.04 per cent solution of chlorophenol red. If the color of the urine remains the same, it is safe to assume that the acidity is around ph 5.2. The pinker it turns, of course, the higher the acidity.

Microscopic study of the urine should be made every other day to see whether pus or bacilli are present.

The use of drugs in this treatment is varied. I will mention only the ones I have used in my cases. These were used only after an appearance of the ketosis. In those cases in which the acidity of the urine was above ph 5.2 ammonium chloride in the form of enteric coated tablets was given in the amount of 80 to 90 grains daily until the ph was lowered. The use of methenamine may help in some particular cases. Colon bacilli made by Krueger method were used in all of the cases. This is given hypodermically, as any bacterial antigen. No other drugs were allowed. Daily soap suds enemata were taken by each patient. Bacillus Acidophilus was given each day to change the intestinal flora.

Patients should not be kept on this diet for more than ten or twelve days, whether the results have been favorable or not. Several short courses of the dietary treatment are preferable to one long course. If microscopic examinations do not reveal the organism for three consecutive days, the diet should be discontinued.

There will be cases in which we do not get satisfactory results. In those cases we should search for some foci of infection, such as an involved prostate gland, urethral cysts, or infected urethral glands. When the prostate gland is found to be infected, gentle massage of the gland is given every other day.

In some cases where the cocci type of infection is associated with the bacillary type, neo-arsphenamine gives results.

There are two other types that do not respond to treatment and no explanation can be given for this. These are the group which will not develop a ketosis, and the one in which the ph

of the urine remains high in spite of the administration of large doses of some acidifying agent.

## SUMMARY

1. From the literature and in my experience, we have a valuable addition in the treatment of cases of cystitis and pyelitis caused by the colon bacilli.

2. Owing to the simplicity of the treatment, every physician in general practice should be

able to carry the treatment out in his office.

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## SOUTH CAROLINIANA

J. I. WARING, M.D., CHARLESTON, S. C.

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A case report with comment on the great length of life of the *B. Tularensis* in the human body.

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A review of the subject and expression of confidence in electrocoagulation under spinal, sacral, or caudal anaesthesia.

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The value of a comparatively new non-toxic triphenylmethane dye-bismuth compound in the treatment of the infectious diarrheas, by I. S. Barksdale, Greenville. Arch. Ped. 53: 243, April, 1936.

The author finds the dye very useful in diarrheas of infectious origin. It is administered by mouth.

Congenital pemphigus neonatorum, by William Weston. So. Med. J. 29:905, Sept. 1936.

Concerning a case report of a baby girl with successive crops of bullae which involved the entire skin. A brief review of the literature, etiology, and treatment is given.

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SEPTEMBER, 1936

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### AMERICAN BOARD OF INTERNAL MEDICINE

One of the most far reaching developments in American Medicine, in all probability, is that of the new Board designed to certify specialists in Internal Medicine which begins to function actively with the first written examination in December, 1936. Successful candidates at the written test will be eligible for the practical and

clinical tests in April, 1937. The fee for the examination is forty dollars. Application blanks may be secured by writing to Dr. Walter L. Bierring, 406 Sixth Avenue, Des Moines, Iowa.

It is pretty well conceded that a broad foundation in internal medicine is highly desirable for any medical student or physician, regardless of the specialty he may intend to pursue. The well known divisions of medicine and surgery have for a long time been recognized, and certain organizations like the American College of Physicians and the American College of Surgeons have done much to bring about higher standards of qualification. The general plan of this Board is not very different from that of some eight or ten other Boards of certification for specialists already established. In looking over the requirements one is impressed with the high standard to be demanded of the candidate.

This Board is an outgrowth of the activities of the American College of Physicians and the American Medical Association along this line. The examiners include men of the highest eminence in both the United States and Canada. The Certification Board for Surgeons is to be organized shortly also.

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### FOUNDER'S DAY AT THE MEDICAL COLLEGE, NOVEMBER 5

An important event every year in our State now is that of the celebration of Founder's Day at the Medical College of the State of South Carolina. The exercises usually include an address by an outstanding clinician, and this year it is a pleasure to announce that this man will be Dr. Reginal Fitz of Boston. The mere mention of his name brings to our minds the enviable traditions of American Medicine. More details will be given later, but the event should be looked forward to and placed on the calendar of every physician in South Carolina as one of importance to our State.

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### THE POST GRADUATE COURSE AT ANDERSON

As was anticipated, the Clinical Assembly held at Anderson was a marked success. About one hundred physicians were in constant attendance. The officers were reelected, and Ander-

son will be the place of meeting in 1937. Efforts will be made to include more largely Georgia and North Carolina, the field from which both teachers and graduates may be in-

terested. This type of refresher course is now in the ascendency in this country and abroad. We have thus made a good start in South Carolina.

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## SURGERY

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WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

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### "READJUSTMENTS IN THE THORACIC CAGE AND ITS CONTENTS FOLLOWING TOTAL AND PARTIAL PNEUMECTOMY"

Recently additional light has been thrown upon the fate of thoracic cavities resulting from partial or total removal of a lung. Shifting of the mediastinum and the level of the diaphragm, dilatation of the remaining lung tissue, and changes in the conformity and size of the thoracic cavity are the recognized compensatory factors. However it has generally been considered that they are insufficient to effect a complete closure of a cavity of large size. Thus surgical collapse of the chest wall has been commonly resorted to—as a persistent cavity would be an ever present source of danger due to its likelihood of becoming infected. Another factor is that should these compensatory mechanisms succeed in obliterating the cavity, there might be so much displacement of the mediastinum as to interfere with the cardio-respiratory function. For this reason also thoracoplasty has been resorted to—to keep the mediastinum in its proper place.

In a study of 36 cases—10 of total pneumectomy, and 2 of post-traumatic atrophy of the left lung—Dr. William Reinhoff of Baltimore made some important observations concerning the obliteration of large pleural cavities. (Sou. Med. Jour. 29:445 May '36).

The compensatory factors aforementioned are of primary importance and are the first to take effect. The remaining lung tissue be-

comes greatly dilated—this Dr. Reinhoff distinguishes sharply from emphysema which is a disease process. Cavities on the left, unless very large, are likely to be taken care of completely in this way. The heart is rotated and the right lung extends actually into the left hemithorax both anteriorly and posteriorly. Such is not the condition in cavities on the right. Whereas there is some shifting of the mediastinum, the heart does not rotate as readily to the right, and apparently the left lung can not cross the midline. The result is that the major portion of the cavity has to be cared for in another way.

Immediately following operation there is an outpouring of serosanguinous fluid. The air collects at the top and is rapidly absorbed. The fluid very soon clots. Fibrin is precipitated and a scaffolding forms. Fibroblasts grow in from the periphery and thus organize the contracted clot. The result is a fenestrated labyrinth of connective tissue, with clear fluid occupying the interspaces. On X-ray examination it is difficult to distinguish this from lung parenchyma. It is in this manner that the pleural cavities, not compensated for otherwise, are obliterated.

The foregoing observations, while definite, have not yet been made upon a sufficient number of cases to be accepted as generally obtaining. Should they be, they will have a far-reaching effect upon thoracic surgery, simplifying certain phases of it. The post-operative effusion will be considered as a beneficent mechanism; no longer will aspiration be practiced in these cases to prevent infection.



## PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 311 (30742)

Feb. 21, 1936

*Case of Dr. Cannon*

Student Able (reading):

A negro man, 43 years of age, admitted 1-9-36; died 1-13-36.

History (obtained from friend): Less than an hour before his admission to the hospital, the patient was apparently well and was working. Suddenly he stopped talking (and probably fell), was removed to a bed. 30 minutes later convulsive movements began, and the mouth was drawn to the left side. Later the convulsive movements stopped and the patient was admitted in a comatose condition.

No history of trauma, alcoholism, diabetes, epilepsy or any other illness.

Examination: Temp. 99, pulse 96; resp. 36; B. P. 175-60. A well developed, comatose male. Skin: dry and warm. Eyes: "Rt. eye scarred and opaque (bluish) with tumor of sclera. Left pupil irregular, constricted, does not react." Slight tremor of tongue. Teeth carious. Inguinal lymph glands palpable. Neck: negative. Chest: expansion equal, lungs clear. Heart: apparently not enlarged. Apical impulse diffuse. Systolic murmur (chart infers that murmur was apical). Rate slow, numerous extra-systoles. Abdomen: No abnormalities noted. Neurological: Left extremities slightly spastic, left eye turned up and out. KJ's positive on both sides, no ankle clonus or Babinski. No reaction to painful stimuli on left, reaction present on right.

Lab: Urine (1-11) S. G. 1.030; alb. 0, sugar a trace, acetone 0, casts 0, occasional leukocyte, RBC 0. Blood (1-9) Hb. 90 per cent (T), WBC 11,600, polys 70 per cent, lymphs 26 per cent, monos 4 per cent; plas neg. Thick and thin smear for plas (1-10) neg. Spinal Fluid (1-9): normal pressure, clear, colorless; cells 28 per cu. mm., lymphs predominating; globulin a trace, sugar 1 plus; col-

loidal gold 1112210000; Kolmer and Kline 4 plus.

Course: Temp. rose suddenly to 106 at 8 A.M. of 1-10, fell to 101.6 at 12 noon, then rose slowly to 106 on 1-12 at 8 A.M., remaining near that level until death. Pulse followed temp. closely. Resp. usually about 40, were 66-68 for last 12 hours. On 1-10 convulsions were generalized and continued at intervals of a few minutes all day. Face drawn to left side. On 1-11, ankle clonus was elicited on left. "Apparently a flaccid paralysis of left side of body." Face continued to twitch, but generalized convulsions ceased, patient remaining in coma. Spinal fluid on 1-11 showed dark, yellow-brown fluid under slightly increased pressure, with a few blood cells present. (Further study of this specimen apparently not made). 1-12 Rales over bases of both lungs. Ceased to breathe on 1-13-36 at 12-45 A.M.

Dr. J. H. Cannon (conducting): Mr. Goodlett, will you open the discussion?

Student Goodlett: We have the record of a negro man, 43 years of age, who had apparently been quite well until just before the onset of his present illness. This onset was very abrupt, and resulted in paralysis and convulsions. Examination disclosed a paralysis of the left side of the body, and of the right side of the face (since the face was drawn to the left). This gives us a crossed paralysis, localizing the lesion in the pons, at the level of the nucleus of the facial nerve. In addition, the cell count in the spinal fluid, and the colloidal gold curve suggest the presence of syphilitic disease of the central nervous system, and the spinal fluid Kolmer and Kline bear this out.

It seems to me, then, that we have a case of syphilitic disease of the meninges and probably of the cerebral blood vessels. I believe that the sudden onset of cerebral symptoms indicated a hemorrhage into the pons, probably on the basis of the vascular disease already present.

Dr. Cannon: You believe that syphilis was the cause of a cerebral hemorrhage. What

else might have caused this clinical picture?

Student Goodlett: He may have had a cerebral embolism from an old heart lesion.

Dr. Cannon: Why do you say an "old" heart lesion? How would embolism occur from an old lesion?

Student Goodlett: Possibly an old arteriosclerotic plaque broke off and lodged in the brain. Or, in case of a more recent and an active valvular lesion of the heart, a vegetation might have broken off and lodged there.

Dr. Cannon: Is syphilis a common cause of cerebral hemorrhage?

Student Goodlett: Not a common one, but it causes hemorrhage occasionally.

Dr. Cannon: How about thrombosis? Could it have caused this picture?

Student Goodlett: With thrombosis, the symptoms usually come on more gradually.

Dr. Cannon: Mr. Rutledge, can you add anything to the discussion?

Student Rutledge: I differ with Mr. Goodlett in one point: I believe that syphilis is a common cause of cerebral hemorrhage. But I agree with him in the general analysis of the case, and my diagnosis is cerebral hemorrhage on a background of meningo-vascular syphilis. I do not believe that the onset could have been as sudden as this in cerebral embolism, and the area involved would hardly have been as large as the record here seems to indicate.

I saw the autopsy, though, and there was certainly no gross evidence of massive hemorrhage; a few small petechiae were noted, but no hemorrhages large enough to give these symptoms.

Dr. Cannon: Do you believe that hemorrhage is a more common manifestation of meningo-vascular syphilis than thrombosis is?

Student Rutledge: No, I believe that thrombosis is more common, but I do not believe that hemorrhage is uncommon.

I think the essential lesion here was located in the pons. That would easily account for the fever, because of its proximity to the heat center. That explanation is hardly necessary, however, as the fever could be due to the convulsions themselves.

Dr. Cannon: Does anyone else care to comment? (No answer).

Dr. Lynch will present the autopsy findings

now and leave time for discussion after the autopsy report.

Dr. Lynch: There was little to be seen grossly at autopsy, the diagnosis in a case such as this depending on the histological findings.

You see here a section of brain (using microprojector), showing a medium-sized blood vessel that is greatly dilated and contains a recently formed thrombus. It is surrounded by a well-defined collar of lymphocytes. The same appearance is noted in sections taken from all parts of the brain, indicating that the process was quite diffuse. Numerous petechial hemorrhages can be seen, and these were noted grossly, and given as the finding on which the diagnosis of encephalitis was made grossly. Within the meninges there is a similar picture, as you can see; here the meningeal blood vessels are surrounded by lymphocytic cells. But the meningeal involvement in this case appears minor when compared to the relative severity of the inflammation within the brain. In addition, evidences of degeneration can be made out within the various nerve-cell bodies, although that cannot be demonstrated with a projector.

It is thus easily established as a case of encephalitis. But what is the nature of the encephalitis? It resembles in almost every respect the appearance of the brains from the 1918-19 epidemic of encephalitis. The recent epidemic in St. Louis was usually similar to this, although the lesions were seldom so widespread throughout the brain. Frequently we hear that the type of encephalitis which occurred in the epidemic of 1918-19 is no longer with us. But quite frequently we see a sporadic case which is entirely similar to those other cases. A few years ago we had a number of such cases in close succession here in Charleston, although there were not enough cases to call it an epidemic.

He had positive serological evidence of syphilis, and at autopsy he was found to have a mild syphilitic aortitis. While syphilitic encephalitis is occasionally quite similar to this case on the basis of the microscopic findings, I am inclined to believe that this was a sporadic case of lethargic encephalitis, occurring in a syphilitic individual. The sudden onset in the clinical part of the picture, and the distention of the



blood vessels, the petechial hemorrhages and the marked edema of the brain in the histological part, make me believe that this was not syphilitic.

In addition to his encephalitis, this patient also had an early lobar pneumonia, the lung being in a well-established stage of red hepatization. This would indicate that his pneumonic inflammation probably began at about the time his sudden cerebral symptoms occurred. I am speculating on the possibility that this man had the virus of encephalitis in his brain, but lying latent, and that the acute infection caused the latent cerebral infection to become active. This is the explanation that is commonly given for those cases of typical encephalitis that occur in children following even the milder contagious diseases, as mumps, chicken pox, measles and pertussis. The so-called "post-vaccinal" encephalitis is explained in this manner by some. Of course I do not believe that the pneumococcus itself caused the encephalitis, as the pneumococcus would have caused the suppuration; but I am inclined to believe that pneumonic infection permitted the encephalitis virus to stir itself from a latent stage and become active.

I would like to hear some clinical discussion of the anatomical findings in this case.

Dr. Cannon: Since this patient was on my service, I guess I must try to defend my diagnosis of syphilitic vascular disease of the brain, with hemorrhage. The suddenness of onset is very difficult to correlate with any diagnosis other than hemorrhage. I am afraid that I would make the same error if I had such a case again. But we are taught a worth-while lesson from this case: even if the inflammatory process causing the symptoms is diffuse, there may be localizing symptoms to make one suspect a focal lesion.

Dr. Wilson: I went over this patient on the wards in one of my clinics with the class. We were discussing the different causes of hemiplegia, and decided that this man's hemiplegia was a result of vascular disease and cerebral hemorrhage.

When we err, we should always ask ourselves the question, Can we avoid this error next time? The inconsistency of the findings should have made us suspicious of something unusual in this case, but instead it made us suspect that the

original examiner, who made the record, had made incorrect observations. With hemorrhage, spasticity usually comes on several days after the onset of symptoms; here it was present when first seen. Positive ankle clonus is usually present when spasticity has developed; here flaccidity followed spasticity, and the ankle clonus was obtained during the time of flaccidity.

I have seen a number of cases of encephalitis in which a hemiplegia developed, but prior to this case I had never had an autopsy on such a case of encephalitis.

I have seen the symptoms of encephalitis come on very abruptly, but the symptom at onset is usually headache.

The blood pressure in this case would seem to suggest an insufficiency of the aortic valve, because of the high systolic pressure and the low diastolic pressure. Since there was no evidence of disease of the aortic valve at autopsy, I am at a loss to explain this blood pressure reading; possibly it would have been different if it had been taken several times.

Dr. Chamberlain: Since I was not here for the early part of this conference, I could not take a part in the discussion prior to the presentation of the autopsy findings by Dr. Lynch. And my statements now may be somewhat biased.

But there is much in the record to make us question a diagnosis of cerebral hemorrhage, although the suddenness of the onset would certainly make us consider that diagnosis closely. The variation in the reflexes and in the muscular condition of the extremities is certainly not what we would expect in a hemorrhage severe enough to cause coma. Rather we would expect complete flaccidity and a total loss of the reflexes in this stage, as Dr. Wilson pointed out. Convulsions can only be explained by a lesion in or near the motor cortex. But the deviation of the left eye, and that eye only, to the left and upward, suggests that either the left abducens nerve was badly stimulated or else the left oculomotor nerve was paralysed distal to the nucleus. In either case, such a lesion would have to be well below the cortical area. Whether the facial paralysis was of a cortical type or not cannot be determined from the record; if it was not of a cor-

tical type, it would be further evidence of the diffuse character of the lesion.

Since the various parts of the neurological picture cannot be explained on a localized lesion in one part of the brain, it becomes apparent that the lesion must have been a diffuse one, of the nature of an encephalitis or a meningo-encephalitis.

Dr. Lynch has pointed out that occasionally any one of many bacterial agents or their toxins

may go haywire and be followed by encephalitis, and the subsequent pictures of encephalitis may be quite alike in all respects, no matter what the inciting agent. Experimentally, an acute type of encephalitis can be caused in the rabbit by inoculating him with the serum from an ordinary fever blister. Dr. Lynch's thesis as to the possible cause of the encephalitis seems to me to be as logical as any.

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## OBSTETRICS AND GYNECOLOGY

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J. D. GUESS, M.D., GREENVILLE, S. C.

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### PRENATAL CLINICS OF THE MATERNAL AND CHILD HEALTH DIVISION OF THE STATE BOARD OF HEALTH

The Division of Maternal and Child Health of the State Board of Health has organized and is conducting prenatal and well children clinics in most of the counties of South Carolina. The director of the division is Dr. R. W. Ball, formerly connected with the county health unit of Richland county. He is deeply interested in the work of his division, and is using every effort to make this work of real benefit not only to the indigent women and children of the State, but to the doctors as well.

The writer has had considerable opportunity to observe the workings of this new division of the State Board. He has conducted a number of the prenatal clinics in the Piedmont section of the State. Dr. R. C. Bruce, president of the State Medical Association, appointed him to represent that body on the Advisory Board of the Division of Maternal and Child Health and he has sat with the board at their first quarterly meeting. Furthermore, he has had a number of conversations and some correspondence with Dr. Ball, the director. These various contacts have enabled him to reach certain conclusions concerning the work as it is now organized, the ultimate aims of the department, the benefits that will accrue to the women of the State, and finally the effect that this work will have on the medical profession.

First of all, it should be realized that the work of the division is in its infancy and that it began without personnel and with a plan which was only in outline. The organization is being improved day by day. The personnel is being trained and improved, and what it is today is no true indication of what it will ultimately be. The work that is now being done will be improved upon, its scope will be broadened to reach more women and children, the educational features will be stressed more and more, and the cost per patient reached will be materially lessened.

The writer's first impression is that the director is earnestly trying to secure the cooperation of the doctors of South Carolina. He is trying to protect their interests, and he is giving every suggestion made by any one of them most careful consideration. He has no desire or intention of taking paying practice away from them, and he wishes to have them to cooperate in the conduct of the clinics. County Medical societies have been asked for suggestions, and these suggestions have been followed so far as practicable since the inauguration of the program.

The clinics are carefully worked up in advance by field workers. The prospective patients are called upon individually, and their financial status is investigated. None but the truly indigent, who would otherwise receive no prenatal care except in the case of catastrophe,



are allowed to attend the clinics. More than this, where defects are found that seem to require medical treatment, no such treatment is given, the clinics being entirely diagnostic. The patient requiring treatment is sent to the physician of her choice with a statement of the defect found, and the case is turned over to him for treatment. Considering the true indigency of these women, the writer feels that this is carried to an extreme, and that the practice tends to add to the burden of the practitioner with little or no chance of remuneration. However, doctors are sensitive of their prerogative. Only recently he heard a doctor who already has to carry a large burden of free practice quoted as having said that if any woman in his practice attended one of these free clinics, she need not call on him to deliver her. Such an attitude is unfortunate. So long as only truly indigent women are admitted to these free clinics, and so long as only those who are receiving and will receive no prenatal care unless they are so admitted are given that privilege, neither the financial return nor the prestige of any doctor will be hurt. These postulates are seemingly being carried out in a meticulously careful manner.

Some criticism is being expressed with regard to the professional personnel of the clinics. One can well understand this, and yet it is the writer's opinion that this would be more quickly and more satisfactorily worked out if the local doctors in those communities where the clinics are being held would show a greater tendency to cooperate in its solution. The attendance of local doctors at the clinics conducted by the writer has in most instances been occasional and brief. There appears to be no general interest in them. One surely could not expect to be assigned the conduct of the clinic until there is evidenced a willingness to cooperate. Already in twelve instances a local doctor has been assigned to well baby clinics, but only seven local doctors, so far as the writer is aware, have shown enough interest to warrant assignment to prenatal clinics. It is hoped that this will soon be remedied. As the plan now is, a doctor becomes eligible for such assignment when he has attended two clinics conducted by a specialist.

The definitely educational side of the pro-

gram has hardly begun. So far this has been more coincidental than purposeful. The field workers in inviting women to come to the clinics have discussed with them the importance of prenatal care. These conversations set up, as it were, foci from which information, doubtlessly more or less garbled, permeates. The few doctors who have irregularly attended the clinics have seen what constitutes a minimally adequate prenatal examination. But this is not enough. At every clinic the patients should be given a simple lecture on the hygiene of pregnancy either by the doctor or by the nurse. Furthermore, there should be some effort made at community mass instruction, open not only to the indigent who have been contacted, but to every one. The free clinics should not be mentioned at these meetings, but the stress should be put on the idea of seeing one's doctor early and regularly when pregnant. While the program has been deficient in this respect, plans are already formulated to begin such a program. The writer wonders if a plan could not be worked out so that public meetings could be sponsored by the local county medical societies. The program could be arranged either wholly or in part by Dr. Ball's office. No doubt Dr. Ball would be glad to cooperate in such a plan. If the county society did not care to take up such a program, there is an excellent opportunity here for the woman's auxiliary to do something constructive for the community.

This is not truly State medicine. True it is an opening wedge, but one that is still largely under the control of the organized medical profession. Whether it shall continue under such control remains to be seen. It will not and can not be, unless organized medicine shows an active interest in it and assists in its direction and guidance. Quoting from the bulletin, "Working Details of the State Plan for Maternal and Child Clinics," "The responsibility for treatment of abnormalities found at clinics lies with the medical profession. If the local physicians do not treat these patients, then naturally it will ultimately become a State problem. It is not our desire to enter the field of curative medicine; our work is entirely preventive, and with the cooperation of the local physicians it will remain so." Are the doctors of South Carolina too blind to see or too indolent to seize the opportunity that is here?

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### SOME BEDSIDE OBSERVATIONS ON THE DYING

By

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Because life, notwithstanding its tribulations, is glamorous, an exciting adventure; because it binds us by ties of love and duty to the things of this earth; because permanent obliteration of our identities is an unbearable thought, and because through lack of intimate experience we neither know the anguish that accompanies death nor the terrors that lie beyond it, we of the human race intensely desire to live as long as possible. To accomplish this end we have expended a prodigious amount of thought and ingenuity.

Confronted in its beginning by the apparently inexorable law of nature that all who live must die, our race refused to be bound by it. We continued, and still continue to hold the instinctive hope that some day, and in some way, this law might be annulled. Accordingly we began at once to lay plans for its downfall. After simplifying the problem by dividing ourselves into two entities, body and soul, we concentrated on the rescue of the latter, considering it the most important of the two. Body, we left to its fate until a later time.

Our success in the preservation of our immaterial selves, our souls, was as brilliant as it was easily achieved: soul, we postulated not only survives the body but lives forever, being immune to all of nature's destructive forces. Having devised this unique premise, we then established for its defence an impregnable fortress which we called Religion. Thus by one

glorious maneuver we removed personality, our most cherished self, beyond the realm of death and made it as permanent as God himself. Having completed this task 1936 years ago, we next turned our attention to the rescue of the body.

We are concerned today with the fate of our material selves, our bodies, in whose behalf our efforts have so far met with but puny success. Body plainly and palpably dies, disintegrates, and returns to dust. In two thousand years of intensive endeavor we have succeeded in adding but ten years to its natural span of life.

As physicians daily reminded not only of the somatic transiency of life, but also of the impotency of our efforts to prolong it, we may well ask ourselves the question: is the eternal contest with death worth while? Is the faint hope for a large success in some remote century of the future sufficient incentive to continued labors? Our answer given in terms of melancholy experience might well be a negative. But to give the answer is not our privilege. We are the appointed agents of two billions of people who by word and deed indicate that they desire us to carry on. The love of life, forever immanent in the breast of man, will not despair: it places its destiny in our hands with confidence and hope.

To acquit ourselves honorably in this high office we must not only acquire a profound knowledge of the processes of life, but also (and equally important) we must try to comprehend the nature and mechanism of its enemy death. In the first of these requirements we are and have been diligent. The literature of medicine comprises vast volumes on the structure and functions of the *living* body in both healthy and diseased states. Much has also been written concerning the state of the *dead* body. But



scientific studies on the *dying body* are woefully inadequate. It is as if the innate fear of the dying, so pronounced among primitive peoples, has intimidated the hand of science, and caused it to tremble and withdraw. Surely there is no better place to try to unravel the mystery of death than at the bedside of one who is experiencing it. Having this conviction and knowing little of practical value about the onset of death, I began fifteen years ago to make bedside notes on all the deaths I witnessed, which last year reached the total of two hundred fifty. The observations, opinions, and conclusions hereafter expressed are based upon these notes and upon a review of the available literature.

#### THE NATURE OF DEATH

The phenomenal progress made by medical science has not done away with the mystery that enshrouds death. We have a few clues, that is all: and they come from the research laboratory rather than from the bedside. Crile believes he has produced experimental proof that *life* depends on an adaptive difference in electrical potential "between the brain and the other organs and tissues, especially the liver." Conversely "*death* is the absence of a difference in potential—final equilibrium." This electrical charge, he finds, is on the films of the cells. It is created by oxidation, and in turn helps to cause oxidation. Further study of his work engenders the feeling that this electrical energy, which is the equivalent of life, is inherently perpetual, and finally disappears only because the cellular batteries of the body, through chemical changes, become incapable of retaining it.

That life is inherently immortal appears to have been proven by the famous experiment of Alexis Carrel. In this experiment Carrel has kept a piece of chicken heart alive and healthy for twenty-four years—six times the normal life-span of a chicken. At the present time by the aid of a special pump devised by Colonel Charles Lindbergh he is meeting with success in keeping whole organs alive after they have been removed from the body. However, notwithstanding the implications of this achievement, Carrel holds no hope for the final banishment of death:

"In the same manner as the body is limited

in space, it has temporal frontiers. Since the time marked by a clock is recorded within all living beings by irreversible changes, the conquest of death is unthinkable."

The irreversible changes of which Carrel speaks are, he believes, largely of a chemical nature.

By combining the conclusions of Carrel and Crile we arrive at this definition of the nature of death: Death is complete and permanent cessation of vital functions, brought about by *irreversible electro-chemical* changes in the cells of the body.

#### THE PROGNOSIS OF DEATH

A generation ago the older physicians took pride in their ability to predict the time of death. Many of us have seen a colleague dramatically pronounce the patient's doom while relatives and loved ones stood by in sorrowful and credulous awe. We rarely do it that way any more, and in consequence save ourselves occasional embarrassment. How many people are there now alive who were "given up to die" years ago? That blessed endowment of all living tissue, the natural tendency to recovery, plus an obstinate and combative spirit, has humbled many a pompous doctor who knew his disease but not his patient. Even in the so called fatal diseases it is risky to give an unqualified prediction of death, unless it be close at hand. I am personally acquainted with two victims of pernicious anemia who received such a sentence from capable physicians. The brilliant discovery of Minot and Murphy rescued them a few months later.

To venture a prediction as to the *time* of death is particularly hazardous. I once had the mortifying experience of seeing my patient resume breathing and live for ten minutes after I had pronounced him dead. Not once, in all the deaths I have witnessed, has it been possible for me to say on what stroke of the clock life took its departure. Death is a gradual change, subduing first the vital organs, especially the heart and brain. Last to succumb are the epidermal structures. The hair and the nails not only live but actually continue growth for several hours after somatic death.

Certain signs and symptoms are alleged to be dependable forewarners of approaching death,

and clinicians have grouped and paired them in an attempt to bring exactness to the art of prognosticating the end. The result is rules and aphorisms, most of which, in my hands at least, have been unreliable and confusing. For example:

*With a diastolic blood pressure of 130 or more the life expectancy does not exceed three years.*

Six years ago I found in my practice twenty patients whose diastolic pressure exceeded this figure. Twelve are now alive, five are dead, the status of the other three unknown. I now have three patients whose diastolic pressures have constantly been above 130 for ten years.

Gibson's rule: *In pneumonia when the blood pressure falls numerically below the pulse rate death is to be expected.*

Having found that the blood pressure falls below the pulse rate in most cases of severe pneumonia, particularly in young people, I no longer pay any attention to their relative positions. The value of Gibson's rule is approximately the same as that of Deaver's "fair, fat, and forty" saying.

Pulsus Alternans, gallop rhythm, Cheyne-Stokes respiration, loss of sphincter control, subsultus tendinum and carphologia, disappearance of the deep reflexes, disappearance of the radial pulse, etc., are all of grave import but not necessarily indicative of death. In serum sickness I once saw the radial pulse absent for six consecutive hours, with recovery. Recently a child ill with scarlet fever had gallop rhythm for two days, absence of the radial pulse for two hours, but recovered. Who has not seen recovery from shock, syncope, hemorrhage, and coronary embolism despite the temporary disappearance of the pulse?

Another rule I learned and had to forget:

*In typhoid fever, when the graph of the temperature coming down crosses the graph of the pulse going up, hemorrhage is indicated.*

Hemorrhage, like syncope, invariably slows the pulse, not only in typhoid fever but in all other conditions in which it is profuse enough to depress the blood volume.

The explanation, I take it, is that in the pres-

ence of a low blood volume the heart fills slowly, and, for efficiency's sake, contracts slowly. A rapidly contracting heart, would in these circumstances propel such a small quantity of blood that there would be no pulse at all. Only after the blood volume has been restored either by dehydration of the tissues or by administration of fluids does the pulse increase in rate, and this is usually too late to be of diagnostic importance.

Seneca's physician found *medatio mortis*, the sense of dying, to be an ominous symptom, but it is not a dependable one. Ryal and others have shown that it is the result of a vascular crisis, which may or may not threaten life. It can be ignored, however, only in young people and in those of neurotic disposition, for death at times does announce its approach to the victim.

Believing that electrocardiographic studies might reveal the presence of death before it could be seen clinically I had tracings made on two moribund individuals. In both instances electrocardiographic death and clinical death were almost simultaneous. However Hanson and others in a study of twenty-five cases found that an average time of five minutes elapsed between clinical death and the final complex. In one instance this interval was thirty-five minutes. Levine and Matton reported a clinical death from Stokes-Adams disease in which there was asystole for five minutes. Following intracardiac injection of adrenalin the patient recovered and was able to leave the hospital.

To me (and I suspect to most clinicians) the most dependable sign of approaching death is the facies so well described by Shakespeare, and before him by Hippocrates. When Hostess saw Falstaff "fumble with the sheets, and play with flowers, and smile upon his finger's ends" he "knew there was but one way; for his nose was sharp as a pen." The ears look bloodless and turn their lobes out; the eyeballs glaze with film, a waxy, cadaverous pallor steals over the face, and though the patient may still breathe, the observer suddenly gets the eerie and repulsive feeling that he is in the presence of a living being from whom personality has fled.



## MIKULICZ' DISEASE

By

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Anderson, S. C.

A peculiar disease in which there is enlargement of the salivary and lacrimal glands was described by Mikulicz before the Society of Scientific Medicine of Konigsberg in January, 1888. Leucutia and Price quote the following from the minutes of the meeting. "Both lacrimal and salivary glands were symmetrically tumefied, resulting in marked swelling of these organs and considerable disfiguration of the face. The tumors developed gradually, and they were at the time of the examination of a hard consistency, painless and without any manifestations of an inflammatory reaction. No other pathological change could be demonstrated in the patients affected with these tumors." Smith and Bunk state that the literature contains about 100 cases of the disease proper up until 1928.

The most practical classification seems to be that of Schaffer and Jacobsen in which, (I) Mikulicz' disease is divided into (A) familial, (B) Mikulicz' disease proper, while, (II) Mikulicz' syndrome is further classified as (A) leukemic, (B) tubercular, (C) syphilitic, (D) lymphosarcomatous, (E) toxic, (F) gouty, (G) febris uvioparotidia, sub-chronica. In short, under the term Mikulicz' syndrome many other diseases have been described which have their manifestations in the parotids. In going through the literature one is impressed by the number of cases which are reported as Mikulicz' disease but which in reality are either leukemic, tubercular, or syphilitic. Mikulicz' disease proper is a rare disease, and should include only those cases of non-inflammatory swelling of the lacrimal and salivary glands without involvement of the lymphatic system and without alteration of the blood.

Etiology: The cause of the affection is not known. If syphilis, tuberculosis, leukemia, or Hodgkins disease can be demonstrated, the disease comes under the classification of Mikulicz' syndrome and it is not true Mikulicz' disease. John reports four cases of enlarged parotids associated with diabetes, but no mention is found elsewhere in the literature of a diabetic associa-

tion. Cases are reported from early life through old age, both men and women.

Symptoms: The symptoms, as described in the literature, consist of enlargement of both parotids and both lacrimal glands, which is painless and non-inflammatory, a dryness of the mouth, and of the conjunctival sac, which frequently causes conjunctivitis and occasionally corneal involvement. General health is described as being unimpaired. The blood picture is normal, the spleen is not enlarged and other glands are not affected except through occasional involvement of the other salivary glands. Cases have been reported in which there was involvement of the lacrimal glands alone and of the salivary glands alone. The disease is evidently of long duration, Lane reporting the average to be 7 1-2 years.

Pathology: Smith and Bunk state, "It is a disease of the lymphoid tissues of the lacrimal and salivary glands with secondary destruction of the prechyma. It is probable that this tissue, for the most part solitary nodes in and about the walls of the ducts, is subject to diseases quite like those of lymphoid tissues elsewhere in the body."

Treatment: Formerly the iodides and arsenic were recommended. At the present time x-ray therapy seems to be the choice.

Case Report: Mrs. S.R.W., age 61, first seen on May 27, 1936.

Complaint: Swelling in front of and below both ears, aching, soreness, and shooting pains through the head, ears, and neck for about 3 years. Dryness of the mouth with aching in the eyes.

Family history: Negative.

Past history: Had good health in childhood. Has never been strong, though she has never had any serious illness. Does not think she has ever had mumps.

Present illness: Began as far as she can determine 3 years ago. She was very sick in bed for 2 or 3 weeks. The glands in front of the ears swelled, and the eyes became red and very painful and inflamed. Just following this she had a right lacrimal sac removed and shortly thereafter, the left. The eyes got better temporarily but have continued to give her trouble at intervals since that time. The parotids have continued swollen. The mouth

has been dry over the whole period. Her general health has been very poor, and she has now come to the point where she does not sleep without taking sedatives. Has lost about ten pounds in weight.

Examination: A woman, age about 60, in evident distress. There is conjunctival redness and injection, both eyes, with shreds of pus in the conjunctival sac. The lacrimal glands are not enlarged, as far as can be determined. Both parotids are enlarged, the right one most markedly, with slight tenderness in the left. The lymphatics underneath the angle of the jaw may be slightly enlarged. The sublingual salivary glands are apparently normal. The parotid ducts are easily probed and no foreign body found. A stringy gelatinous mucoid material is expressed from the ducts through pressure on the glands. X-ray shows no stone in the parotids. The left ear canal shows an abrasion with crust formation and is very tender. Blood Wassermann negative. Blood count shows red cells 3,900,000; hemoglobin 73; white cells 7,800; polys 72; lymphocytes 26; mononuclears

2. Urinalysis was negative.

Diagnosis: Mikulicz' Disease Proper.

Treatment: She was put on Fowler's solution. Sodium cacodylate was given intravenously. At the same time she was referred to Dr. Frank Wrenn for x-ray treatment of the parotids. The swelling has decreased under x-ray therapy, but I am doubtful if there is any improvement in the general condition.

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#### THE EARLY DIAGNOSIS OF ACUTE APPENDICITIS

By

D. O. RHAME, Jr., M.D.,  
 Clinton, S. C.

Appendicitis is a clinical entity of vital importance to the practitioner not only because it is the commonest surgical condition in the abdomen—but also because it contributes more to the general mortality than any other surgical condition. Since appendicitis is primarily a disease of young adults, this mortality is more to be regretted than that of people dying at the cancer age. It is also largely a preventable mortality, and while the quality of surgical treatment plays some part, the essential factor in lessening deaths from this cause is prompt and accurate diagnosis.

The etiology of appendicitis has not been conclusively established—and there are too many probable factors to mention at this time. It is to be suspected at any age—though a great majority of the cases occur between the ages of 5 and 25 years. Suffice to say that attacks usually come on without warning and without known cause in individuals during normal health.

The pathology of appendicitis consists of inflammation of the organ with its attendant sequelae and complications: suppuration, engorgement, obstruction of its lumen with rupture, obstruction of its blood supply with consequent gangrene, localized peritonitis or abscess formation, or spreading peritonitis.

Symptomatology: From the variety in its pathology, it can be seen that the clinical picture of appendicitis and its complications is a varied one.

The essential problem is the recognition and adequate treatment of inflammation while the process is still limited to the appendix—and before complications occur. However, this is, in actual practice, very difficult to accomplish, in part because the symptoms in certain cases may be deceptive, in part because indifferent individuals may not call for medical attention until infection has reached an advanced stage. We must, therefore, be prepared to recognize appendicitis in all stages.

Appendicitis ordinarily occurs during normal health, without prodromal symptoms, although



it may be preceded by a feeling of malaise, loss of appetite, or vague abdominal discomfort.

The first and foremost symptom is PAIN which is usually of moderate severity, referred diffusely to the region of the umbilicus. It is usually continuous, with varying intensity—and may be colicky or cramplike. Frequently the pain is relatively mild, rarely does it approach the severity of renal colic. The pain is usually followed after an interval by nausea and vomiting; however, these may be absent, especially in young children—and this eventuality should be borne in mind.

Within a few hours the pain tends to localize in the right lower quadrant, and the diffuse pain in the mid-abdomen diminishes. This shift of pain is peculiarly characteristic of appendicitis. The temperature and pulse rate usually increase to a moderate degree, running higher in children than in adults; however, a temperature over 102 is unusual. Severe inflammation in children may cause a temperature up to 103 or 104 but rarely, and a temperature of 104 or over should make one suspicious of another condition. A normal temperature and pulse does not rule out appendicitis. Accompanying the temperature is a leucocytosis of moderate degree, between 15,000 and 20,000. Again the rule is broken in children, where the leucocytosis in purulent inflammation may be from 15,000 to 30,000. A child admitted here a week ago with ruptured appendix showed a count of 34,000 leucocytes. A thrombosed or gangrenous appendix is not infrequently accompanied by a normal blood count.

The order in which these symptoms appear is important. The usual sequence is pain, vomiting, fever, and leucocytosis. If the fever and nausea precede the pain, a diagnosis of appendicitis is very doubtful. Here again, however, it is to be remembered that child's history of sequence is often unreliable.

Ordinarily there is constipation due to nature's attempt to splint the bowels. Rarely there is diarrhea. A severe diarrhea is sometimes present in appendiceal abscess. Chills are rare, and a chill at onset should make one suspect acute infection elsewhere. It has been noticed that patients with appendicitis are seldom interested in food.

There may be increased urinary frequency,

especially if the appendix lies adjacent to the ureter. In these cases the pain may be indistinguishable from that of renal colic. However, examination of the urine will usually rule out the kidney pathology. Recently the writer mistook an acute appendix for ureteral colic, due to the pains radiating to flank and right testis, and testicular tenderness.

On inspection it may be noted that the patient unconsciously holds the right leg somewhat flexed in order to relieve tension in the right lower abdomen. The respiration may be costal rather than abdominal. On palpation there are with few exceptions local tenderness and increased muscular rigidity over the right lower quadrant. This tenderness may be marked or slight, but is usually definite. This is without doubt the cardinal sign of appendicitis.

It is far safer to suspect appendicitis when there is acute tenderness anywhere in the right lower abdomen. There are a few deep lying appendices where the tip lies in the pelvis, and tenderness can only be elicited by rectal or pelvic examination; thus the importance of such an examination in any case where there is any doubt.

Ordinarily the disease is clinically well marked a few hours after onset, and often the diagnosis can be made within four to six hours after initial pain. Remember that appendicitis is the commonest source of acute abdominal pain associated with nausea, constipation, and localized tenderness occurring in young adults. The diagnosis depends on the accurate interpretation of a few essential facts in the history and physical findings.

It is well in taking the history of any acute abdominal condition to focus the patient's mind on the beginning of the attack by asking him what he was doing when the pain came on. This brings out whether the onset was sudden and sharp or gradual. Next, inquiry should be directed as to the effect of the pain; did it make him lie down, double up, or was he able to carry on? After this he should be urged to relate what happened in chronological order, using enough questions without leading him.

Diagnosis ultimately depends, however, on the interpretation of the physical examination. It is essential to determine at the outset whether

local abdominal tenderness and true muscular spasm exist. Palpation of the abdomen should be begun very gently, at a distance from the expected site of the lesion, comparing muscular tension at corresponding levels on both sides of the abdomen. The degree of pressure necessary to produce pain is carefully noted. It is most helpful to distract the patient's attention from the examination, carefully watching his facial expression for clues as to the amount of pain elicited. I have seen patients steadfastly deny they felt any pain, probably from fear of operation, only to give away the facts by facial contortions. Children will do this sometimes for no explicable reason. It is also well to have nearest relatives out of the room, as patients often disguise their feelings before their families. Do not confuse real sustained muscle spasm with voluntary contractions due to rough palpation. It is not superfluous to repeat that extreme gentleness is necessary in all palpation. Gaining the patient's confidence will often mean the difference between a hazy and a complete examination. Posture of the patient is an important point. Frequently he lies with one leg drawn up, or walks with a stoop, favoring his side to that extent.

Skin hyperesthesia is frequently present over the right lower quadrant in acute appendicitis, and is a good diagnostic sign. It may be elicited by stroking or pinching the skin, and comparing the amount of reaction on the two sides.

Palpation with one finger pressed deep will often elicit one small spot of tenderness which could not be shown when the whole hand was used.

Peritoneal inflammation can be demonstrated by a gradual pressure of the palpating hand, followed by sudden removal of the hand, giving the classical rebound tenderness.

The diagnosis in typical cases is easy and straightforward. If we can obtain a suggestive history of pain, with nausea, find slight but definite evidence in temperature, pulse, and leucocytosis of a septic inflammatory process, and confirm these observations with an unmistakable degree of local tenderness and muscle spasm in the right lower abdomen, we are justified in diagnosing appendicitis. Having reached this conclusion, operation should be advised immediately. If there is doubt, the

only safe measure is to have a surgeon's opinion as soon as possible. Here I'd like to call attention to three cardinal DON'T'S:

1. Don't give food or opiates.
2. Don't give a laxative.
3. Don't delay.

Differential diagnosis is essential mainly to rule out conditions in which laparotomy is contraindicated; for while confusing pneumonia and appendicitis may be a fatal mistake, the confusion of appendicitis and salpingitis or twisted ovarian cyst results only in technical error, easily corrected after incision. Thus the main differential lies in deciding whether or not it is a surgical condition. Therefore I shall mention here only the medical entities often confused with an acute abdomen:

1. Pneumonia.
2. Typhoid fever.
3. Gastro-enteritis
4. Influenza.
5. Lead colic.
6. Tabes Dorsalis
7. Renal Disease.

In the event that appendicitis goes undiagnosed in its early stages, the following course is often seen. In the average case the signs of the disease become accentuated in the second 24 hours. Local tenderness and spasm increase and affect a wider area; the febrile reaction and leucocytosis continue or become more marked, and the bowels become more constipated, and vomiting may continue. If a laxative has been given, the doctor may mistake the sudden relief from pain attendant on perforation for improvement, and thus be lulled into a false sense of security which is rudely dispelled when he feels the marked weakening of a rapid and thready pulse, and notes the gradual distension of the abdomen, the shallow rapid thoracic respiration, and the dilation of the alae nasae, and the change from local to diffuse tenderness and rigidity. In extreme cases rigidity is entirely replaced by distension, and the pinched anxious expression tells all too vividly of the approach of the end. It is needless to say that in these last types of cases, those in extremis, surgery is of little or no avail.

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Graham's Surgical Diagnosis.



## BLOOD TRANSFUSION

By

DAVID F. ADCOCK, M.D.,  
Columbia, S. C.

The idea of giving strength and vigor by giving blood dates back to 1492, when an unnamed Hebrew physician sacrificed three youths to give blood to Pope Innocent VIII. In 1615 Libavius described blood transfusion with the use of two fitting silver tubes. The first concrete advance was made by Harvey, when he discovered the circulation of blood in 1616, and first authentic transfusion, in a human, was performed by Denys in 1667. Hemoglobinuria was noted following this transfusion. Due to a death, soon after this, transfusion was outlawed in France. However, it was revived by Blundell, an obstetrician, in 1818. Landsteiner, in 1901, started the work on blood grouping which resulted in the present systems. The next great need was some way to give the blood before clotting occurred. Crile's cannula supplied this, and in 1915 Lewisohn controlled coagulation. Now blood transfusion was firmly established, and indications for the procedure increased paralleling the increase in safety. The indications are hemorrhage, shock, certain blood dyscrasias, hemorrhagic diseases, certain marked anemias, and miscellaneous conditions.

The Jansky system of blood grouping was established first. The International system is the most scientific, but the Moss system is most popular in the United States. The donor should be a robust male between 18 and 35, with a normal heart and blood pressure, a negative history of syphilis and recent malaria, and a negative Wassermann. It is better if he has not had food recently. If he is apprehensive, his fears should be allayed as much as possible. If the donor's veins are small, the needle should be directed towards the hand. An adjustable tourniquet, and the opening and closing of the hand helps to insure a regular blood supply.

The recipient is usually easier to control after a narcotic, and there should be a novocain skin anesthesia with both. When inserting the needle a small amount of vaseline will help prevent the disconcerting skin drag almost as

much as nicking the skin. And the recipient, usually being a woman, and usually having more difficult veins, should have the needle inserted first, unless there be danger to the donor from a blood stream infection.

The first danger of blood transfusion is due to blood incompatibility, and a severe reaction from blood incompatibility can often be foretold by the recipient's warning while on the table. Sudden, severe headache, urticaria, chill, rise in temperature, severe praecordial pain and dyspnoea, pain in the lumbar region, an irregular pulse, or marked fall in blood pressure should cause the transfusion to be stopped, and adrenalin given. The transfusion should not be resumed from that donor. Especially is this important if attempting to use the same donor twice, or if the patient has had several transfusions. Broken down blood is probably the toxic agent which accounts for the severe reaction. The pathological findings, as described by Bordley, of tubular nephritis, liver damage, and icterus are very similar to those of black water fever. In fifteen cases, reported by him, the amount of blood given was stated. In the five who recovered 314 c.c. was the average amount given, and in the ten who died 564 c.c. was the average amount. Hemoglobin in the urine, and diminution in the amount of urine was recorded in most of Bordley's cases. It is doubtful if less than 50 c.c. of blood kills unless due to an anaphylactic reaction. I have transfused small amounts of human, dog, duck, and chicken blood into rabbits with only one death. This death was due to the repetition of 4 c.c. of human blood after one month. The second great danger of blood transfusion is speed. If there is an error in the cross-matching on the indirect side, the serum of the donor will clump the recipient's cells. This can be prevented by giving the blood slowly, so that the donor's serum will be diluted. Dilution prevents the agglutinins and hemolysins from acting. Speed can be increased where there has been loss of blood volume, and can be faster in the young, with normal heart and vessels, than in the old. The danger of displacing a hemostatic clot by transfusion is probably less than is supposed. Movement of the patient, however, may displace the clot and such a transfusion should be done in bed. A

3-5 c.c. transfusion per pound weight at 50 c.c. per minutes usually changes the blood pressure less than 10 m.m. Hg. The third danger is an acute dilatation of the heart, but this is probably a rare occurrence. I find that a 3-5 pound rabbit can stand the rapid injection of 100 c.c. of saline, which gives them from 20 to 33 1-3 c.c. of fluid per pound weight. The fourth danger is embolism. Small clots are usually seen in cleaning the apparatus after transfusion. Particularly are the clots noticeable on valves. But either due to their softness or adherence to the apparatus, this remains a theoretical rather than a practical danger. Danger from air embolism is eliminated by present day technique. The fifth danger is the transference of disease. The diseases most likely to be transferred are syphilis and malaria.

The operator should use the method which gives him the best results, and the one with which he is most dextrous, as the percentage of reactions is usually much higher where difficulty is encountered in the transference of blood. Lewisohn was able to reduce reactions from 23 to 13 per cent by permitting only eight senior members of the house staff to do transfusions. The mechanical methods are gaining ground on the more standardized citrate method. The citrate method is utilized for intra-peritoneal, auto-transfusions, and the use of blood from cadavers. This method has changed very little since its introduction. Immunotransfusions are given by any method. Minot's and Dodd's recent work on guanidine, calcium and sodium citrate made me wish to become more familiar with the calcium and citrate balance. Dr. Lipscomb, of the University of S. C., tells me that, chemically speaking, it takes ten grams of sodium citrate to combine with 2.1 grams of calcium. 19.214 grains of sodium citrate are used in a 500 c.c. transfusion. 1 c.c. of 20 per cent solution of sodium citrate, or 3.068 grains will regularly throw a rabbit into convulsions, and left alone this rabbit will regularly die. If one is able to hit the ear vein of the rabbit while in convulsions (I was able to do this three times), calcium will instantly stop the convulsions. The rabbit will stand this amount of sodium citrate if given in blood or more dilute solution. Twice this amount intra-peritoneally did

not cause convulsions, and if calcium was given before the citrate, convulsions were not produced. It seems from this, as previously found, that the rapid introduction is much more dangerous than the slow introduction of sodium citrate into the blood stream. This is probably one of the reasons for the accepted rate of citrate transfusions being 15 c.c. per minute. This method has controlled speed, which is one necessity for an ideal transfusion.

The multiple syringe method is well adapted to hospital use, and is used by two of the large hospitals in this state. This method requires excellent team work, as it takes practice for the two workers to be ready at the same instant—one with his syringe emptied and the other with his syringe full. It wastes some blood, and the needles are sometimes displaced while connecting and disconnecting the syringes. The Memorial Hospital in Richmond uses this method where there may be danger to the donor from blood stream infection, and the syringes are discarded each time.

#### MECHANICAL METHODS

The Jube, a grooved, plunger type of apparatus, is popular in Greenville, while the Moore, a valve set, is preferred in Columbia. The Unger and the Scannell sets permit washing with saline while connected. Numerous other sets are on the market, and new ones are being introduced frequently. These mechanical sets have rubber connections. These tubes should be short, as they cannot be coated with paraffin satisfactorily. But short tubes markedly increase the difficulty in doing the hardest of transfusions—that of giving blood to a delirious patient.

Immediately after the transfusion the set should be cleaned, for unless the blood is removed it is decomposed, and may be a foreign element in the next transfusion. After the best of washings, hydrogen peroxide will frequently displace visible clots.

#### RESULTS

I. Spectacular results can be obtained in hemorrhage and shock. I have transfused with the most satisfying results bleeding peptic ulcer, ruptured ectopic pregnancy, incomplete abortion, ruptured spleen and kidney, trauma with



loss of blood, and post-operative shock.

II. Transfusion lowers the operative mortality in patients with a hemoglobin of 50 per cent or lower.

III. It is a valuable adjunct in anemia.

IV. It is of temporary help in the control of hemorrhagic diseases.

V. Certain blood dyscrasias show some improvement from blood transfusions, but I have seen an increased number of transfusions cause an increased percentage of reactions.

VI. The results have been somewhat disappointing in the treatment of infections.

VII. Miscellaneous conditions:

A. Improvement occurs in chronic ulcerative colitis with bleeding.

B. I have seen remission in three cases of pellagra.

VIII. Reactions as reported by Regena Beck occurring in 11.14 per cent in unmodified blood transfusions, and 29.29 per cent in the citrate transfusion.

IX. An increase in red cells of approximately half million and an increase in hemoglobin of 11 per cent may be expected.

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#### DISCUSSION

Dr. George H. Bunch, Columbia:

Dr. Adcock has ably presented the indications, the contra-indications, and the technic of blood transfusion. His paper has been educational.

I shall discuss blood transfusion from the standpoint of the surgeon. To me it is the greatest contribution of this generation to surgery. Modern surgery has been made possible by three great scientific discoveries or achievements—first, asepsis, by Lord Lister; second, anesthesia, by Dr. Crawford W. Long, of Athens, Georgia, which is only one hundred fifty miles from here; third, blood transfusion, which has so recently been perfected. The safety and the facility by which one person's blood may be made to flow and to function in the circulation of another has greatly enhanced the field of surgery. By it inoperable risks have been made safely operable; by it poor risks have been made good risks for surgery. Heretofore we required a minimum of thirty per cent hemoglobin before undertaking major surgery. Now we transfuse these anemic patients so that we have fifty per cent hemoglobin before undertaking major surgery. In my opinion, a patient with fifty-per-cent hemoglobin is one-hundred-per-cent better risk than a patient with thirty per cent hemoglobin.

Operative deaths are usually due to hemorrhage, shock, and infection. Blood transfusion is the only specific for acute blood loss. To see, after transfusion, the returning color and animation that follow almost in the twinkling of an eye in a patient dying of acute hemorrhage is to me a miracle as real and as wonderful as any described in the Bible. Surgical shock has been ascribed by Frazier to the loss of blood volume. Whether this be from hemorrhage or not, there is no more certain way of relieving it than by blood transfusion. The ultimate outcome of infection following operation is dependent upon two conditions: One, the resistance of the patient, and, two, the virulence of the infecting organism. The resistance of the patient, if he be anemic, can certainly be considerably improved by blood transfusion. Safety demands that, when a major operation is to be undertaken in which dangerous hemorrhage may result or is to be expected, a suitable donor be typed and ready for transfusion, if it be necessary. There

is a moral and medicolegal obligation in giving blood from a donor who has not been proved to have a negative Wassermann reaction.

Giving blood to a patient often does more than relieve blood loss and restore blood volume. It sometimes restores the power to clot, which has been lost in the blood that remains in the patient. This is notably seen in chronic bleeding ulcer, duodenal or gastric. After repeated small transfusions the clotting power is restored and the bleeding stops; whereas a single large transfusion, by increasing the blood pressure, may cause increased hemorrhage.

In conclusion, I wish to say that the surgeon who does not protect his patient before operation, if it be indicated, or who does not restore his patient after operation by blood transfusion, if it be indicated, is negligent.

Dr. Thomas Messina, St. Francis Hospital, Greenville:

I wish to emphasize just one fact. We always cross-match and match these patients before transfusion. I want to emphasize this: Before you transfuse a patient a second time, always have that patient matched and cross-matched with any donor that you see fit. I have had cases recently at the hospital where I happen to be house surgeon who have had a transfusion four or five times. I got four or five donors the first time and used the same donors to transfuse the second time and got a very bad reaction. I came to the conclusion that each patient should be matched and cross-matched before he is transfused a second time.

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## RIDGE MEDICAL SOCIETY MEETING

The Ridge Medical Society met August 17, 1936, at 7:20 o'clock P. M. with a larger attendance than usual.

Dr. R. H. Timmerman reported a case of absence of penis in a middle aged man. Dr. W. W. King in discussing it thought it was probably due to granuloma inguinale and narrated some of his observances.

Dr. M. M. Mostellar of Columbia made an instructive address on Cholecystography and various methods of diagnosis which included the dyes, barium, X-Ray, etc. He exhibited a number of films showing the gall bladder in various conditions. He also made a number of X-ray pictures of bones with a small portable machine. A number of those present used a fluoroscope to observe bones, etc.

Dr. R. W. Ball of the State Board of Health made a short talk on pre-natal clinics and asked for the cooperation of the doctors in regard to them.

Dr. G. E. McDaniel of the State Board of Health made an address on syphilis and its ravages and gave valuable statistics relating thereto and asked for cooperation in outlining a suitable, practical method of controlling and eradicating it.

A committee of three was appointed to cooperate with the State Board of Health.

Dr. W. W. King presented the matter of establishing a new hospital at Summerland College. The society endorsed the establish-

ment of the hospital and appointed Drs. King and Garvin to secure contributions from the doctors of our society for it.

Dr. and Mrs. Garvin invited the society and auxiliary to have their next meeting with them in Ridge Spring. Their invitation was joyously accepted.

Dr. M. B. Woodward after being away rejoined our society.

The Ladies Auxiliary met with Mrs. A. L. Ballinger and had a large attendance.

Notwithstanding the hot weather we had interesting meetings.

Supper was served in The Rutland Hotel where good fellowship reigned.

W. P. Timmerman, M.D., Sec'y.

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## YORK COUNTY MEDICAL SOCIETY MEETING, YORK, S. C., SEPTEMBER 24, 1936

Dr. Robert Ball of Charleston, head of the maternal and child health division of the state board of public health, was the principal speaker at a meeting of the York County Medical society held in the office of Dr. John I. Barron, York physician. "Maternal Preventive Medicine" was the subject of Doctor Ball's talk, which was followed by a general discussion of this topic.

At this meeting the physicians discussed some changes that they thought would be advisable in the workmen's compensation law. Doctors from all parts of York county were in attendance.



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### OCTOBER, 1936

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THE SOUTH CAROLINA MEDICAL ASSOCIATION  
MEETS IN COLUMBIA 1937

President R. C. Bruce of Greenville and the other officers of the Association including the Council have given much thought already to the next meeting of the Association. The date has been fixed as usual for the third week in April, but this time the date will fall on April

13, 14, 15. The Columbia Medical Society will be the host, and that means an unusually successful meeting of the State Association. The Capital city has many advantages as a place of meeting for any State organization, since it is centrally located and has good facilities otherwise. The President has been most fortunate in his selection of guest speakers. Further details of the scope of the meeting will be published from time to time, but it is not too early for those who intend to read papers to begin to think about their part in making the convention a success. In due time the Scientific Committee will authorize invitations to be extended essayists for a place on the program. At one of our Columbia meetings there was an attendance of around seven hundred. Why not increase this wonderful record?

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#### THE CONFERENCE OF STATE SECRETARIES AND EDITORS OF STATE JOURNALS

In many respects one of the most important organizations in this country is that of the State Secretaries and Editors held each year in Chicago under the auspices of the American Medical Association. This organization is a real clearing house for up to date information on every phase of medical activities. The date has been fixed this year for November 16, 17. It is gratifying to know that the meeting will be held in the remodeled headquarters home of the A. M. A. and in an auditorium designed to accommodate this and other important organizations in the same building. The headquarters has been modernized in every respect at a cost of about half a million dollars and will be an increasing asset to organized medicine in this country. At these meetings the Secretaries and Editors have the benefit of personal contacts not only with the officers of the A. M. A. but the Board of Trustees and the Presidents of many State Societies. Such contacts provide sources of information available nowhere else. The programs always include discussions of the most pressing problems before the profession; and when the Secretaries and Editors return to their homes, they have a composite picture of what is going on not only in the headquarters building but in every state in the Union.

PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE  
STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 313 (31109)

March 13, 1936

*Case of Drs. Martin, Prioleau, and McCrady*  
Student Nelson (reading):

A negro woman, domestic servant, age 24-29 years, admitted 1-28-36, died 2-5-36.

History: Dysmenorrhoea for 4-7 years. For past 3 months "this pain" has been almost continuous and cutting in nature. Menstrual periods originally lasted 4 days, now last 3, still are regular. Denied abnormal uterine bleeding and leukorrhoea. Had a 4 plus Wassermann in clinic, for which she was treated with neoarsphenamine. One living healthy child, normal labor and puerperium. No other pregnancies. Had diarrhoea (which lasted about 30 days) a few months before admission, and this was followed by constipation which has persisted. Pain on defecation, occasionally passed blood while straining at stool. Has had a "pimple" on left buttock since June (1935).

Exam.: Fairly well nourished negress, apparently not in pain. Temp. 99.8, pulse 88, resp. 24, BP 135/80. Mucous membranes anemic. Pupils react well in accommodation, poorly to light. Several carious teeth. No lymph glands palpable. Chest clear. Heart not enlarged, no murmurs heard, heart action normal. Abdomen: "Is slightly rigid on examination. Several irregular, small nodular masses palpated in upper left quadrant, supposedly fecal impaction. Slight tenderness in lower left quadrant. Liver and spleen not palpable." Rectum: "Annular constriction about 2 1-2 inches from anus that would not admit tip of finger." Draining fistula on left buttock. Vaginal exam. (Dr. McCrady): "The uterus is fixed at the base. The cervix is small. The vaginal fornices are so indurated that the uterine appendages cannot be felt. Partly encircling the rectum in the vaginal fornices can be felt a hard thickening. On rectal exam. the lumen is constricted but the lining smooth."

Lab.: Urine (2 exams.) completely negative. Blood (1-29): Hb. 70 per cent; RBC 4, 560,000; WBC 9,600; lymphs 28 per cent, monos 7 per cent, polys 62 per cent. Blood Kolmer and Kline negative.

Course: Temp. varied about normal for first 6 days, then rose to 101.4 on 2-3; fell to normal the following night, then progressively rose to reach 106 on the day of death. Pulse generally higher on chart than temp., imperceptible for last day. Resp. normal until 2-4, after which they were 32-44 per minute. Abdomen became markedly distended. On 2-2 an enema was given without difficulty and a small amount of flatus and some blood clots were returned. Distension not materially relieved by enemata, pitressin, turpentine stupes or Levine tube. Operation (2-4): "The intestines are markedly distended particularly the colon. The rectum is constricted behind the lower portion of the uterus—" "—dense tissue at the base of the broad ligaments." Colostomy done (sigmoid); spinal anesthesia used. Immediate post-operative condition fairly good, but during the night the pulse became weak, and the skin cold. Stimulants failed to revive her and she died at 6:10 PM on 2-5-36.

Dr. Prioleau (conducting): Mr. Quantz, will you open the discussion?

Student Quantz: From the history of dysmenorrhoea, the pelvic examination and the operative findings, it is evident that this patient had a "frozen pelvis," from induration and fixation of the broad ligaments. This fixation of the pelvic organs could come about either from disease of the rectum or of the pelvic organs.

Gonorrhoeal infection of the fallopian tubes frequently gives a "frozen pelvis," but the fixation is seldom so extreme as it seems to have been in this case; too, I would have expected a history of leukorrhoea if tubal infection had caused it.

Endometriosis is a second thing to consider.



If the history had been gotten in a little more detail, especially as to the exact time of occurrence of the pain in the menstrual cycle, we might be able to make or exclude that diagnosis definitely. A densely fixed fibrosis of the pelvis, usually with retroversion of the uterus, would be the thing to expect on examination of a patient with pelvic endometriosis.

Tuberculosis of the pelvis is another thing to consider.

Dr. Prioleau: What do you mean by "tuberculosis of the pelvis?"

Student Quantz: I mean to say a tuberculosis of the pelvic peritoneum, probably as a result of tuberculosis of the tubes. But if such had been the case, it would seem that fluid and tubercles would have been noted at the time of operation. The presence of an anal fistula raises some suspicion of tuberculosis, too.

Carcinoma of the rectum is another thing to consider. The history of pain on defecation, bleeding at stool and constipation are all very suspicious, even in a patient as young as this one seems to have been. From the history it cannot be learned whether rectal symptoms have been present for a short time only, or whether they have been present from the first.

An ordinary syphilitic stricture of the rectum might also cause almost all of these symptoms.

I do not see how any of these possible diagnoses can be ruled out or definitely established in this case. Chronic intestinal obstruction from some type of stricture of the rectum was the important feature of the case.

Dr. Prioleau: Mr. Marshall, will you continue?

Student Marshall: Mr. Quantz has pretty well covered the field, but I believe that syphilitic stricture of the rectum deserves more emphasis. This patient had a positive Wassermann at one time, and received anti-syphilitic treatment, but I rather doubt that it was adequate. Simple inflammatory stricture of this order could cause all the symptoms relative to the rectum. To explain the frozen pelvis, some other condition would have to be assumed, and I believe that a chronic salpingitis is the most likely explanation for a fixation of the pelvic structures, especially in the negro. I believe that her rectal condition was a separate affair.

Dr. Prioleau: I examined this case several

times in the clinic. The rectum was constricted at a much higher level than most inflammatory strictures occur. And the stricture was not as dense and unyielding as most inflammatory strictures are: the examining finger could be projected into the stricture, and the mucosa felt smooth but nodular.

Student Marshall: A gumma of the ischio-rectal space is frequently followed by stricture formation and fistula, but would usually be at a lower level than it now seems that the constriction in this case was found.

Endometriosis would fit in with the occurrence of a stricture at this high level. It would help us in making this diagnosis if we knew that the pains came on a day or so after menstruation began, and continued for several days after menstruation ceased.

Dr. Prioleau: Can you explain the rectal findings on the basis of tuberculosis? Can the operative findings be correlated with that diagnosis?

Student Marshall: If tuberculosis of the peritoneum had been present, it probably would have been noted at operation. The rectal findings are not very suggestive of tuberculosis. An x-ray of the chest would have helped to exclude tuberculosis of the rectum, as it is usually associated with an active pulmonary lesion when it occurs.

Dr. Prioleau: Mr. Harrison, what do you think of this case?

Student Harrison: I think endometriosis can explain the whole picture. We have a history of dysmenorrhoea, with progressive increase in the pain until it became constant. The rectal stricture could occur as a result of continued menstruation of aberrant endometrial tissue in the cul-de-sac and in the rectal wall, with fibrosis occurring. The woman was in the child-bearing period of life, at which time endometriosis occurs. The pain on defecation, constipation and bleeding at stool go with the rectal stricture, which is frequently associated with ulceration of the bowel. The only thing missing from the characteristic picture of endometriosis is the rather characteristic bluish cysts which are usually noted in the vaginal vault. There is no notation in the record as to their presence or absence. The operative findings—dense fibrosis in the broad ligaments and other

pelvic structures—can be explained on a basis of endometriosis.

Syphilis of the rectum could also explain the clinical picture, but it seems to be less likely because of the negative Kolmer and Kline on this admission. Too, syphilis seldom causes a frozen pelvis, and the rectal stricture associated with syphilis is usually at a low level.

Dr. Prioleau: Mr. Cantey?

Student Cantey: I think the whole picture is best explained on a basis of endometriosis. Endometriosis can cause stricture of the rectum. Ulceration is apt to occur above the stricture as a result of fecal stasis, and by this method infection from the intestinal tract could enter the ischio-rectal space, cause suppuration and be followed by fistula formation.

Dr. Prioleau: With an anoscope I could see the lower end of the mass; there was no apparent ulceration at this level.

Mr. Baker, what is your idea as to the cause of death?

Student Baker: I believe that she died of a pneumonia which developed after operation. But that's probably wrong, on second thought as she had spinal anesthesia.

Dr. Prioleau: Pneumonia is probably just as common, or more so, after spinal anesthesia as after an inhalation anesthesia.

Mr. Pernworth, what do you think was the immediate cause of death?

Student Pernwerth: She died about 26 hours after her exploratory laparotomy. I believe that she died from shock, failing to react from the operation and from the depressing effects of spinal anesthesia.

Dr. McCrady: The only way endometriosis can be accurately diagnosed preoperatively is on a basis of the vaginal findings, and the situation reminded me very much of endometriosis, so much so that that was my diagnosis. There was a marked induration of the fornices, and the thickening of the rect-vaginal septum was very striking.

I felt that this mass was extrinsic to the bowel, and ruled out carcinoma of the bowel on that basis.

Inflammatory venereal diseases, especially lymphogranuloma, can also give such a rectal and vaginal condition.

A number of you have mentioned that fistula

in ano suggests tuberculosis. More recent work indicates that rectal fistula are usually not of tuberculous origin. I imagine that the autopsy findings will surprise us.

Dr. Lynch: At the time of autopsy, we were not certain what the rectal condition was. As you can see here (demonstrating autopsy specimen), there is dense fibrous tissue about the rectum, markedly constricting the lumen. Accumulations of mucoid material are noted within this fibrous tissue. At the time of autopsy this was thought to be muco-pus. Grossly we thought that it was probably an inflammatory stricture, with a carcinoma of the rectum being the second-best choice. There was an ulcer overlying this constriction, and the fistulous tract lead up into the region of this ulceration, although it apparently did not communicate with the lumen of the bowel at the time of autopsy. There was no evidence of chocolate cysts in the pelvis or rectal tissue, to make endometriosis likely.

After the histological examination, the diagnosis of mucoid carcinoma of the rectum was quite clear. And from the data at hand, I believe that carcinoma of the rectum was the most likely bet. The findings were those of an annular constriction of the rectum at a higher level than an inflammatory stricture is apt to occur. I do not believe that endometriosis would cause a constriction of an annular nature; to do so the endometrial tissue would have to be in the retro-peritoneal tissue behind the rectum, and that would be most unusual; endometriosis would probably cause an induration of only the anterior portion of the rectal wall. Fistula should not have caused us to discard the diagnosis of carcinoma, since fistula can occur just as Mr. Cantey has said, in any constricting lesion of the rectum.

There was dense infiltration of the recto-vaginal septum, of the cul-de-sac and of the post-rectal tissue. The mass was so firmly bound to the sacrum that it could not be dissected away, and had to be cut away with the knife. Endometriosis and tubal infection could hardly cause this dense a fibrosis.

Possibly this patient's age caused you not to consider the diagnosis of carcinoma too seriously. The age should not influence you in this manner, because malignant tumors can oc-



cur at any age, and should always be considered in any obstructive lesion of the rectum. On the other hand, she was probably older than the age she gave; her ovaries appeared to be in the late child-bearing age when studied histologically.

As to the cause of death, the loop of bowel forming the colostomy was acutely inflamed and showed marked necrosis of its mucosa: an acute necrotic colitis, superimposed on a long-standing chronic infection from obstruc-

tion. The colitis was not a result of colostomy but was doubtless there before the operation. She apparently died from shock.

Dr. Prioleau: Carcinoma of the rectum usually gives a firm but elastic constriction of the rectum as was the case here, rather than the dense, low-placed constriction as seen in various inflammatory conditions.

Colostomy in this case was delayed too long, as is usually the case. It should not be delayed until the patient is moribund.

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## SURGERY

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WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

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### "TRANSVERSE ABDOMINAL INCISIONS"

The transverse abdominal incision has its strong advocates, and it is constantly being brought up for consideration. Recently two very good articles upon it have appeared—(Robert L. Sanders, *Annals of Surgery* 104:74 (July, '36) and F. S. Lynn and H. C. Hull, *Annals of Surgery* 104:233 August, '36). In them has been made the necessary comparison with the vertical type of incision.

The main objections to the vertical type of incision are concerned with its division of the posterior sheath across its line of pull. The posterior sheath is formed by fusion of the posterior lamella of the aponeurosis of the internal oblique with that of the transversus abdominis, both of which muscles have a pull essentially transverse. This is increased by their respiratory function and attachment to the chest wall. After division there is retraction which makes closure difficult; the sutures, being placed in line with the aponeurotic fibers, tend to tear out. To this factor is attributed evisceration, adhesions and hernia formation. This applies particularly to the upper abdomen. Interference with the function of the flat abdominal muscles causes splinting of the lower thorax which predisposes to pulmonary complications. Vertical incisions within the borders of the recti do not cut across muscle fibers. Those in the midline do not sever nerves. However

those on either side of any length divide nerves resulting in muscle atrophy. The greatest advantages of the vertical incision are its ease of execution, and of extension upwards or downwards, giving access to practically the whole abdominal cavity. The latter feature is of particular value where there is some uncertainty of diagnosis and the exact exposure required.

As can be judged from the foregoing, the essential feature of the transverse incision is the division of the posterior sheath in line with its fibers. The difficulty is the approach. The methods differ in the treatment of the anterior rectus sheath and the recti muscles. The simplest passes transversely through the thickness of the abdominal wall at the desired level; should it be extended lateral to the rectus, an attempt is made to separate the fibers of the flat muscles. This is simple and quick of execution and closure. The ends of the recti muscles are prevented from retracting by their attachment to the anterior sheath and the linea transversae. The ends of the muscle heal quickly and firmly (Lynn and Hull).

In the method advocated by Sanders the anterior rectus sheath is divided transversely and then separated from the underlying muscle upwards and downwards. The recti are then easily retracted, permitting transverse division of the posterior sheath. The difficult part of this operation is separating the anterior sheath

without tearing the muscle. Its lateral extension is limited, though according to the author, exposure is adequate without this. It circumvents transverse division of the recti muscles by separating them from their sheath, however opening considerable tissue space, a potential danger as regards infection.

While transverse incisions differ in some respects, they have certain things in common. They conform to anatomic and physiologic requirements by following the course of the abdominal wall structures, especially as regards the flat muscles and the nerves. There is a lack of strain on the suture line which promotes

healing and minimizes the danger of evisceration and hernia. The peritoneal closure is more likely to remain intact. They reduce post-operative pain, especially in the presence of cough and nausea. They interfere less with respiratory movements of the lower thorax. If properly drained, their healing is not jeopardized in infested cases.

Probably the greatest disadvantage of the transverse incision is its limited exposure as regards the level in the abdominal cavity. Accordingly it is advocated chiefly where the diagnosis and intended operative procedure are definite and the incision can be made at the level indicated.

## WOMAN'S AUXILIARY

### SOUTH CAROLINA MEDICAL ASSOCIATION

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Dear Auxiliary Members:

Now that vacation-time is over, I am looking forward to a keener interest in Auxiliary work. Since the convention in April, I have written around eighty letters to Auxiliary members and to southern and national officers. In some instances answers were prompt, for which I am grateful. Others have not replied at all. In this work, each member is responsible for the growth and progress of the Auxiliary.

Therefore, I urge you to answer any communications you may receive from your officers so that they may better serve you.

The names of the State officers have been placed in the hands of the presidents of each Auxiliary. Please contact them for any information or help they may be able to give you.

It is urgent that we strengthen present Auxiliaries as well as organize new ones, and in this we need and plead for the cooperation and encouragement of each member. We shall welcome any suggestions from you concerning either.

On July 6th, Mrs. J. L. Bundy and I had the pleasure of attending the Greenville Auxiliary in its mid-summer meeting. Mrs. T. R. W. Wilson, president of the Greenville Auxiliary, entertained us at a beautiful luncheon in the Poinsett Hotel. Members of the board of the Greenville Unit attended the luncheon also, and the fellowship and friendly spirit that prevailed there, as well as the very informative and interesting program in the afternoon, were a source of great inspiration to me.

I was given the privilege and pleasure of announcing a trophy donated by Mrs. Wilson, first vice president, to be awarded to the county publicity chairman who compiles the best pub-



licity scrap book during the year. Rules governing the trophy are: "Best publicity, neatness, and largest number of articles written." The judges will be Mrs. Jenkins Mikell, State Publicity Chairman and one other whom I shall appoint.

There will be a similar trophy awarded for the best historical paper written during the year. I hope each Auxiliary will compete. In planning for the year's work, and for these trophies, let us not forget the Student Loan Fund, the real purpose of our Auxiliary. We must not fall short of last year's wonderful record.

May we remember too, that the real object of our organization is to assist our husbands to promote good health, and to encourage fellowship and friendliness among doctor's families.

Again, I want to pledge my loyalty and personal service to each of you.

Most sincerely yours,

(Mrs. W. Frank) Rena Blanton Strait,  
President, Woman's Auxiliary to  
South Carolina Medical Association.

#### BOARD MEETS

The post board meeting of the Executive Board of the Auxiliary to the S. C. Medical Association met in the parlor of Greenville Woman's College immediately after lunch.

Mrs. Frank Strait, the newly elected president presided. The following members of the Executive Board were present: Mrs. Frank Strait, Mrs. L. O. Mauldin, Mrs. Thos. A. Pitts, Mrs. T. R. W. Wilson, Mrs. W. R. Blackmon, Mrs. Jesse Wilson, Mrs. Buck Pressley, Mrs. C. E. Owens, Mrs. Chas. P. Corn, and Mrs. W. C. Abel.

In order that the by-laws be changed to allow an increase of ten cents per member in state dues, a Constitutional Committee was appointed as follows: Mrs. T. R. W. Wilson, Mrs. Thos. A. Pitts, and Mrs. W. C. Abel.

Mrs. Thos. A. Pitts made the motion, seconded by Mrs. C. E. Owens, that the president-elect assist the first vice-president in the work of organization. The motion was carried.

The treasurer, Mrs. Thos. A. Pitts, requested an auditor for the treasurer's books. That Dr. A. F. Burnside of Columbia be appointed,

met with the approval of the Board.

The President introduced two new councilors, Mrs. W. R. Blackmon of Rock Hill, and Mrs. Buck Pressley of Due West.

Mrs. T. R. W. Wilson suggested that each Auxiliary raise the extra ten cents per member in any way it wishes.

Mrs. Thos. A. Pitts suggested that the secretary write each Auxiliary and ask for a donation of ten cents per member. It was so ordered. Mrs. Pitts also made the motion that \$25.00 be set aside for the use of the President. It was carried.

As there was no other business the meeting adjourned.

Mrs. W. C. Able, Sec. Pro-tem.

#### THE RIDGE MEDICAL AUXILIARY

The Ridge Medical Auxiliary is a wide awake organization. The members are active and take quite an interest in the plans and attend the meetings well. Interesting year books for the year '36-'37 were arranged by Mrs. W. P. Timmerman and Mrs. F. G. Asbill. In addition to the music, business and social feature the following subjects have been selected for study:

"The Teeth"—Mrs. E. C. Ridgell.

"Eyes"—Miss Louise Ballenger.

"The Indian Medicine Man—His Contribution to the Medical Profession"—Mrs. F. G. Asbill.

"The Divine Physician, His Remedies and Cures"—Mrs. W. P. Timmerman.

"Women Physicians"—The Misses Waters.

At the June meeting Mrs. Ridgell read the paper on Teeth. At this meeting the Auxiliary decided to arrange a Medicinal plant scrap book. In addition to some local visitors Mrs. Webb of Wagener was present.

At the August meeting Miss Louise Ballenger read a paper on Eyes. Mrs. Timmerman exhibited a stalk of Poke and gave a talk on the Poke plant. She told about Dr. Norwood of Cokesbury who discovered the medical qualities of *Veratrum Viride* made from the Poke root. At this well attended meeting the following visitors were welcomed; Mrs. Malcolm Mostellar, Mrs. A. H. Johnson of Columbia, Mrs. Carroll Brown, Jr., of Walterboro and Mrs. R. M. Street of Edgefield.

## NEWS ITEMS

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Dr. O. D. Garvin of Ridgespring, S. C. has been appointed public health director for the district comprising the counties of McCormick, Edgefield and Saluda, subject to confirmation of the Executive Committee of the State Board of Health. Doctor Garvin, who succeeds Dr. Goodman Bare recently transferred to Anderson County, is an alumnus of the University of South Carolina, South Carolina Medical College and served as interne at the Columbia Hospital.

Dr. S. A. Ezell, 64, practicing physician of Lancaster, S. C. died in a Rock Hill hospital Wednesday, September 23, after a brief illness. He is survived by his widow; one daughter, Mrs. Richland Sowell, two sons, Fred and Mack Ezell; a sister and four brothers. Dr. Ezell was a member of the Lancaster County Medical Society and the South Carolina Medical Association.

On September 11 under the direction of Dr. Lee Milford, Resident Surgeon at Clemson College, about six hundred freshmen were given the benefit of a thorough physical examination by physicians and dentists. Among the physicians participating were Drs. John Martin, L. J. Bristow, H. M. Daniel, G. S. Clinkscales, T. R. Gaines of Anderson; Dr. J. L. Sanders of Greenville; Dr. J. N. Webb and Dr. E. A. Hines of Seneca.

Dr. J. I. Waring, Assistant Editor of the Journal of the South Carolina Medical Association, visited the Headquarters offices of the Association and Journal, Thursday, September 10. He addressed the Rotary Club and on the afternoon of the same day delivered a lecture on Infant Feeding at the Piedmont Post Graduate Clinical Assembly, Anderson, S. C.

Dr. R. M. Pollitzer of Greenville, Associate Editor of the Journal, Department of Pediatrics, visited the Headquarters offices of the Association and Journal recently in connection with his duties as a member of the Staff of Specialists holding maternity and child welfare clinics in Oconee County.

Dr. D. S. Asbill, of Columbia, has been in New York where he took a course at the American Academy of Ophthalmology and Otolaryngology.

Dr. G. S. T. Peeples, formerly Georgetown County Health officer, left September 26 for Harvard to take a nine months course leading to a certificate in public health.

Dr. Leo Hall was honored on his birthday Thursday evening, September 24, with a surprise party given at their home. About 30 guests called and spent an enjoyable evening dancing, after which refreshments were served by Mrs. Rembert Smith, Mrs. H. F. Stevenson and Mrs. Hall. Doctor Hall is Assistant Supt. of the South Carolina Sanatorium.

Dr. Malcom Mosteller of Columbia has gone to Johns Hopkins Hospital for a course of study.

A pediatrician and public health worker, Dr. Hilla Sheriff of Spartanburg, has been awarded a scholarship at Harvard University.

Many friends over the state will be interested to hear of the marriage of Miss Clara Ravenel, daughter of Mrs. A. G. Barnwell Bennett, to Dr. D. Lesesne Smith, Jr. of Spartanburg. The wedding took place in St. Timothy's Episcopal church, Spartanburg, S. C., October 2, 1936.

The Sanatorium Committee of the State Board of Health will meet soon to determine what improvements in the line of buildings will be made at the South Carolina Tuberculosis Sanatorium with \$250,000 made available through a bond issued authorized by the Legislature at its last session.

The Committee will meet with the architect, J. B. Urquhart, who made preliminary plans for the completion of the sanatorium building project, which originally was to have been financed with combined state and federal funds. The application for a grant for funds to match the state funds is still before the public works



administration, and health officials are still hopeful that it will be approved and make possible the carrying out of the complete project. Otherwise it was explained, the state funds will be used to such other buildings at the hospital as is possible under the limitation. Already one building is being constructed with a \$65,000 allotment made by the federal government. It is now in the plastering stage.

The Committee is composed of Dr. George Dick of Sumter, Dr. William R. Wallace of Chester and Dr. D. Lesesne Smith, Sr., of Spartanburg.

On Monday morning, August 24, ground was broken for the new Oconee County Hospital. The site was donated by Dr. W. R. Doyle and includes six acres located in the fork of the roads leading to Walhalla and Westminster about a mile from the city limits of Seneca. With shovels and picks in hand the following men were present and participated in the brief official ceremony: J. L. Lowery, Mayor of the Town of Seneca; Dr. E. A. Hines, Secretary Oconee County Medical Society; Mr. J. C. Duncan, Supervising Engineer for Oconee County; Mr. B. H. Gambrell, Assistant Supervising Engineer; Mr. B. B. Lawrence; Mr. Frank Hunt; Mr. T. B. Jones; Mr. Carl Blackwell; and Mr. Sloan Davis, Foreman of the WPA force and about fifty men.

This hospital is a WPA project and when completed will cost about fifty or sixty thousand dollars.

The Council of the South Carolina Medical Association met in Columbia, August 27, with the following members present; Dr. R. C. Bruce, President; Dr. J. R. DesPortes, Chairman; Dr. J. H. Cannon; Dr. T. A. Pitts; Dr. W. L. Pressly; Dr. Hugh Smith and Dr. E. A. Hines, Secretary. This was a joint meeting with a special committee from the South Caro-

lina Hospital Association to consider some plan of hospital care for South Carolina. Special committees from both bodies were appointed to study the matter and report at a later date. Representing the Council will be Dr. T. A. Pitts of Columbia; Dr. J. H. Cannon of Charleston and Dr. E. A. Hines of Seneca.

#### LETTER FROM SOUTH CAROLINA INDUSTRIAL COMMISSION

August 26, 1936

Dr. Roger G. Doughty,  
Chairman Workmen's Compensation Committee,  
Columbia, S. C.

Dear Dr. Doughty:

After discussing with you and your Committee the practicability of changing our present method of handling for approval medical bills of one hundred dollars (\$100.00) or less, this is to advise that the Commission has decided that effective September 1st, 1936, we will put into operation the plan whereby all medical bills of one hundred dollars (\$100.00) or less shall stand approved unless protested by an interested party. All medical bills above one hundred dollars (\$100.00) will be handled by the Commission as in the past.

By way of explanation I wish to advise that this plan applies to each distinct medical charge in a case rather than to an aggregate amount of medical items in the sum or more than one hundred dollars (\$100.00).

I want to take this opportunity to thank you and your Committee for the splendid cooperation and help you have given the Industrial Commission in working out a plan that would be satisfactory to all parties concerned.

Very truly yours,

South Carolina Industrial Commission,  
John H. Dukes, Chairman.

JHD-c

## BOOK REVIEWS

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### ENDOCRINOLOGY IN MODERN PRACTICE:

By William Wolf, M.D., M.S., Ph.D. 1018 pages with 252 illustrations. Philadelphia and London: W. B. Saunders Company, 1936. Cloth, \$10.00 net.

This is the most unusual book we have seen on the subject from many standpoints. First of all it has the advantage of being a monograph but the author has taken advantage of suggestions from some of the ablest authorities in the world and of course has approached his labors after an exhaustive search of the literature. The field of course is a fertile one for further investigation but promises important developments in the near future. The author has endeavored to present the subject matter from a simple standpoint and in doing so takes up the endocrine glands one by one as is shown by the study of the pituitary gland in Chapter II. under the following headings:

- Anatomy
- Embryology
- Histology
- Biology
- Physiology
  - Anterior Lobe
  - Posterior Lobe and Pars Intermedia
- Diseases of the Pituitary Gland
  - Infantilism
  - Mongolism
  - Dwarfism
  - Frohlich's Syndrome (Dystrophia Adiposo-Genitalis).
  - Dercum's Disease
  - Schuller-Christian Syndrome
  - Simmonds' Disease
  - Laurence-Bisedl Syndrome
  - Gigantism
  - Acromegaly
  - Diabetes Insipidus
  - Pituitary Obesity
  - Basophile Adenoma of the Pituitary (Cushing's Syndrome).
  - Pituitary Tumors
  - Pituitary Epilepsy
- Summary

A somewhat similar treatment of each gland or simple combination of glands follows throughout the book. As a result of these studies a very worthy effort has been made to draw conclusions that will be helpful to the practitioner of medicine. There are chapters on symptomatology and on laboratory findings. There is a very good discussion of therapeutics. There is an excellent chapter on diseases of children.

firmly; Special Consulting Ophthalmologist, Woman's Hospital; Consulting Ophthalmologist, Veteran's Administration Facility, New York; Lecturer in Ophthalmology, New York Eye and Ear Infirmary; Member of American Board of Ophthalmology; Member of the Society of Surgeons of Paris; Lieutenant-Colonel, M.R.C., U.S. Army. 1254 pages with 436 illustrations, some in colors. Philadelphia and London: W.B. Saunders Company, 1936. Cloth, \$12.00 net.

Our Associate Editor, Dr. J. F. Townsend of Charleston, S. C. in his Department of the Eye, Ear, Nose and Throat for August commented on this new book as follows:

"The Eye and Its Diseases, by Berens (Saunders) is one of the outstanding books on its subject. Those who are familiar with the Text Book of Ophthalmology, by Fuch, will realize the wealth of real knowledge Dr. Beren's book contains when I say that it is like Fuch's Text-book of Ophthalmology, made up to date. It has incorporated in it the results of modern investigators and thoughts. I think that it would be impossible to summarize it but I may try to do so sometime. Those who have read Fuch's Textbook of Ophthalmology will know what I mean when I compare Dr. Beren's book with it. Those who have not read Fuch's Textbook of Ophthalmology will find it of interest to do, or better, to get Dr. Beren's book."

This is a book of twelve hundred and fifty four pages and is the product of a large number of collaborators not only of this country but of professors in many of the institutions abroad. It starts off as is eminently wise with the history of ophthalmology for the history of this first great specialty is of the keenest interest to all medical men. Then follows in admirable order a discussion of the anatomy of the orbit, the eye ball and its adnexa with several other chapters on anatomical landmarks in both human and comparative anatomy. The physiology too has not been neglected. Then the patient steps into the office of the practitioner and since the book is written for the general practitioner as well as the student and specialist it is important that a clear cut routine be followed on the part of the doctor. This has been well done. In the following chapters of the book it would appear that practically every phase of ophthalmology has been considered. There are many admirable illustrations throughout the volume.

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THE EYE AND ITS DISEASES: By 82 International Authorities. Edited by Conrad Berens, M.D., Ophthalmic Surgeon, Pathologist and Director of Research, New York Eye and Ear In-

### SURGICAL CLINICS OF NORTH AMERICA:

Issued serially, one number every other month. Volume 16, Number 3. New York Number—June 1936. 277 pages with 79 illustrations. Per Clinic year February 1936 to December 1936.



Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1936.

These clinics have become more and more practicable for the Surgeon as well as the general practitioner. This number is representative of the best surgical practice in the hospitals of New York City. There is an interesting chapter by Farnum on cardiac disorders in surgical patients. The question of the anesthetist, his experience and his skill is mentioned and then what are the anesthetic agents of choice of the large number now available. He says this about the subject. Open drop ether is, I think, the safest anesthetic with previous sedation. He does not approve of spinal anesthesia in these cases and states that gas anesthesia has its objections. On the whole the author of this article believes that the cardiac deaths have probably been over emphasized and that there is a considerable field of safety in operating on these patients. He warns against the menace of cardiac death in the unknown cardiac risks.

Dudley at Bellevue appeals for the Murphy button in certain cases rather than suture anastomosis.

Potter of Bellevue writes well on the common infections of the hand.

There are many other practical chapters in this volume.

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THE AMERICAN MEDICAL PROFESSION 1783 to 1850. By Henry Burnell Shafer, Ph.D., New York, Columbia University Press, London: P. S. King & Son, Ltd., 1936, Price \$3.25.

This brief study of the American medical profession during the years from 1783 to 1850 serves a two-fold purpose. It covers a period which has been neglected by writers on medical history. There is also the sudden discovery of the anesthetic use of ether, followed by the whole medical revolution. Obviously, during these years the foundations of this revolution were laid. What were they? They were the application of the scientific spirit to medicine, the extension of medical education, the development of societies and medical literature and the arousing of an interest in medicine. A thorough study of the transition of medicine, in America, from colonial to modern practices is attempted in this volume.

Besides its usefulness and interest to the medical profession the book supplies the background of social history insofar as medicine is concerned. It gives the social historian an account of medical activity in the United States during a period for which there is little secondary material. The emphasis upon the United States, excluding European activities unless they affected American development, should be of especial value to the historian of American culture.

The table of contents indicates the transition years of American medicine: 1. American Medicine at the Close of the Eighteenth Century; 2.

Medical Education; 3. Medical Education: Studies and Problems; 4. The Practice of Physick; 5. Medical Ethics and Fees; 6. Medical Literature; 7. Medical Regulations and Societies; 8. Developments in American Medicine; Bibliographical Note; Index.

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BEWILDERED PATIENT. By Marian S. Newcomer, M.D., Boston, New York, Hale, Cushman & Flint, Publishers, 857 Boylston Street, Boston.

This book is an effort to interpret many of the important developments of modern medicine to the layman. The contents are as follows:

- I. Land of Bewilderment
- II. More Than Unaided Eyes Can see
- III. Resistance to Disease
- IV. Your Dynamic Self
- V. Tiny Things That Changed Man's World
- VI. Planning The Family Nutrition
- VII. Creative Instincts And The Sex Cycle
- VIII. Inklings Of Your Intangible Self
- IX. What A Physician Can Do For You and Your Family
- X. Choosing A Physician
- XI. Consultation And Cooperation
- XII. A Complete Physical Examination
- XIII. Playing Fair And Square With The Medical Profession
- XIV. Medical Costs To The Average Family
- XV. Home Care Of The Sick
- XVI. Keeping Fit
- XVII. Meet Emergency And How
- XVIII. Alarming Accidents
- Appendix
- Medical Terms And What They Mean
- Your Medicine Cabinet

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IMMUNOLOGY. By Noble Pierce Sherwood, Ph.D., M.D., Professor of Bacteriology, University of Kansas, and Pathologist to the Lawrence Memorial Hospital, Lawrence, Kansas, Illustrated, St. Louis, The C. V. Mosby Company, 1935.

This book was written primarily for students in medical schools and laboratories and is to be supplemented by laboratory experiments. Even so the busy practitioner will find here much information valuable in his practice. It is a book of six hundred and eight pages and many good illustrations. The whole subject of immunology is a fascinating one and challenges the progressive scientific mind. There is much yet to be learned and even much to be unlearned in this field. The author is a teacher of extensive experience.

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EXAMINATION OF THE PATIENT AND SYMPTOMATIC DIAGNOSIS. By John Watts Murray, M.D., With Two Hundred Seventy-Four Illustrations, Second Edition, Price \$10.00, St. Louis, The C. V. Mosby Company, 1936.

Most physicians develop a more or less routine in the examination of their patients. Some have

simple methods and others very complicated procedures. Somewhere between the two extremes there is probably a satisfactory working program. Books are helpful but every patient is a new problem and absolute routine must be deviated from very often in order that the patient may have the benefit of an individual diagnosis. It is generally conceded by the ablest clinicians that a properly taken history is of paramount importance. The author of this book has carefully considered this phase of examination of the patient. This is quite an extensive write up of the whole subject. There are twelve hundred and nineteen pages. The book first appeared in 1926 and this second edition therefore comes out after ten years. In a decade not so many epoch making advances occur in medicine yet there are always a few of importance. This fact has given the author the opportunity to add most of the newer methods of examining the patient. It is a good book to have on one's desk for frequent reference.

**ARTHRITIS AND RHEUMATIC DISEASE.** By Maurice F. Lautman, M.D., Consultant to the United States Public Health Service Clinic and Director of the Department for the Study of Arthritis, Levi Memorial Hospital, Hot Springs, Arkansas, With a Foreword By Morris Fishbein, M.D., Editor, Journal of the American Medical Association. New York, Whittlesey House, London, McGraw-Book Company, Inc., 330 West 42nd Street, New York, N. Y. Price \$2.00.

This is a new book just off the press September 1. It is the second volume of a series published for the information of the layman. Dr. Morris Fishbein, Editor of the Journal of the A. M. A. writes the introduction. The basic idea of the book is to offer an optimistic viewpoint to the layman in regard to arthritis to displace the rather common view that little hope is available for one who is unfortunate enough to suffer from this disease. The author is in position to have the benefit of a large experience at Hot Springs and therefore his book is authoritative. The volume is a reflection in part of vast studies taking place in this country and abroad about all phases of rheumatism. It would appear that we are nearer to a solution of some of the causes of these disabilities than ever before. It is indeed a comfort to know that multitudes of people suffering from rheumatic disorders do get symptomatically well. To bring about this happy issue we may not yet depend on any specific medication one hundred per cent. It is still necessary according to the author to resort in large measure to rest, proper diet, proper exercise, in short a hygienic life to get the best results. True there are many forms of treatment of great value but for the most part they are simple in application. The exceptional

case will tax the ingenuity of the greatest physicians of the world. This is the most sensible book we have seen to put into the hands of the layman for his instruction in regard to the particular malady under consideration.

#### PROGRAM SEVENTH DISTRICT MEDICAL ASSOCIATION, KINGSTREE, S. C., SEPTEMBER 17, 1936

##### Invocation.

1. Medical Economics. By Dr. R. C. Bruce, President South Carolina Medical Asso., Greenville, S. C.

2. Double Ureters as a Complication in Other Medical and Surgical Conditions; With Illustrative Reports of Four Cases. By Dr. P. E. Huth, Sumter, S. C.

3. The Non-Specific Treatment of Allergic Diseases. By Dr. Hal McC. Davison, Atlanta, Ga.

4. Pyleo-Cystitis Complicating Pregnancy (With Lantern Slides). By Dr. Hamilton McKay, Charlotte, N. C.

5. The Basis of Prognosis and Treatment in Hypertensive Diseases. By Dr. Robert Wilson, Charleston, S. C.

6. The Surgical Treatment of Pulmonary Tuberculosis. By Dr. Frank K. Boland, Atlanta, Georgia.

7. X-Ray Diagnosis in Diseases of the Colon. By Dr. M. E. Parris, Sumter, S. C.

8. The Exaltation of Symptoms. By Dr. O. D. Baxter, Charlotte, N. C.

9. Maternal Mortality. By Dr. Robert E. Seibels, Columbia, S. C.

10. Report of Clinical Cases.

Dr. E. T. Kelley, President, Kingstree, S. C.

Dr. Carl B. Epps, Secretary-Treasurer, Sumter, S. C.

#### The Tulane University of Louisiana Graduate School of Medicine

Postgraduate instruction offered in all branches of medicine. Special courses are offered in certain subjects. Courses leading to a higher degree also are given.

A bulletin furnishing detailed information may be obtained upon application to the

Dean, Graduate School of Medicine,  
1430 Tulane Avenue, New Orleans, La.



## NEWS ITEMS

Mr. H. H. McGill, Superintendent of the Columbia Hospital, announced October 4 that three new internes, all graduates of the University of Tennessee Medical School, had been added to the Staff of the hospital. They assumed their new duties October 1.

Mr. Gill explained that the hospital, in order to have always a group of experienced internes on the staff, had adopted the policy of taking three internes in July and three more in October. During the summer, two junior medical students assisted the three internes who assumed their duties on July 1.

The new internes are Dr. Eva Linn Meloan, of Memphis, Tenn.; Dr. Charles S. Heron, of Chattanooga, Tenn.; and Dr. Samuel L. Applebaum, of Birmingham, Ala. They, with Dr. H. F. Hall, Jr., Dr. Carl S. McMilan, and Dr. C. A. Glenn now make up the staff.

Doctor Meloan is the first woman interne to train at a hospital in Columbia in a number of years.

Sept. 28, 1936.

To the Editor Journal S. C. Medical Asso.

The Scientific Committee of the Georgia Pediatric Society is again ready to announce the program for the coming meeting in Atlanta to be held December 10, 1936. As in the past, we have been very fortunate in securing speakers who are known nationally to the medical profession.

This year papers will be read in the afternoon and evening sessions by:

1. Dr. John A. Toomey, Associate Professor in Pediatrics at Western Reserve University, Cleveland. Dr. Toomey is well known for his studies in contagious diseases.

2. Dr. Julius H. Hess, Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine. Dr. Hess is the author of many books and has made a special study of the care of prematurely born infants.

3. Dr. Henry Helmholz, Head of the Department of Pediatrics of Mayo Clinic. Dr. Helmholz's work on urinary infections in children is well known and he will describe "The Use of Mandelio Acid in the Treatment of Urinary Infections."

4. Dr. W. A. Mulherin of Augusta, assisted

by Dr. Alfred Walker of Birmingham and Dr. Lesesne Smith of Spartanburg.

From this short notice you may be assured that an excellent scientific program will be presented in Atlanta, December 10.

Scientific Committee of the Georgia Pediatric Society:

W. W. Anderson, M.D.,  
W. L. Funkhouser, M.D.,  
M. Hines Roberts, M.D.,  
Joseph Yampolsky, M.D.,  
Chairman.

September 15, 1936.

Editor, Journal of South Carolina Medical Association, Seneca, South Carolina.

On October 15th, 16th and 17th, 1936, we are giving at Duke Hospital a Post Graduate Course on Diseases of the Heart, Circulation and Kidney similar to the one given last year on Diseases of the Gastro-intestinal Tract. Even though we sent out three thousand invitations last year, there were many physicians who reported that they would like to have attended the course but did not receive notice of it.

I am writing to inquire if you will publish in the October issue of your Journal a notice of the course this year extending a cordial invitation to all physicians in your section to be present at the meeting.

The following is a list of the speakers who will participate in the program: Dr. W. T. Longcope of Baltimore, Md.; Dr. Stewart Roberts of Atlanta, Ga.; Dr. Soma Weiss, of Boston, Mass.; Dr. William Porter of Richmond, Va.; Dr. Edwin Wood of Charlottesville, Va.; Dr. Frank N. Wilson of Ann Arbor, Mich.; Dr. Herman L. Blumgart of Boston, Mass.; Dr. Charles C. Wolferth of Philadelphia, Penn.; Dr. Claude Beck of Cleveland, Ohio; Dr. James C. White of Boston, Mass.; Dr. Mont Reid of Cincinnati, Ohio; Dr. Carl J. Wiggers of Cleveland, Ohio; Dr. William deB. MacNider of Chapel Hill, N. C.; Dr. Hugh Young of Baltimore, Md.; Dr. W. F. Braasch of Rochester, Minn.; and Dr. Louis Hamman of Baltimore, Md.

Thanking you very much for your courtesy,  
I am Sincerely yours,

Edward S. Orgain, M.D.

# THE JOURNAL

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### PSYCHOLOGY OF SUB-NORMAL INDIVIDUALS

By

B. O. WHITTEN, M.D.,  
Clinton, S. C.

The term "sub-normal" implies existence of a norm or standard, whether reference is being made to height, weight, health, emotions, or intelligence. Primarily, the latter is under consideration here.

*Identification and Classification of Individuals*—By some method individuals have always been classified by others, usually according to their reactions to life, ability to learn, contributions, achievements, etc., but not until the advent of intelligence tests was there a scientific approach. In 1905, Binet, a French physician, constructed a test which has had many revisions. The one best known is that of Terman, done at Stanford, and known by that name. It is not a completely satisfactory instrument, but in the hands of a competent psychologist, used with tests of special abilities and aptitudes, in connection with developmental history and physical examination, it serves well in evaluating certain characteristics of individuals. A random sampling of the population, when subjected to intelligence tests, shows that 50 per cent cluster around one point, with a gradual shading higher on one side and lower on the other. Boundary lines have been used according to ratings and names given to these groups for the purpose of transmission. The largest group is called "normal," those rating above, "superior," "very superior," and "genius,"—those rating below, "dull normal," "borderline," and "sub-normal," "mentally

deficient," "inferior intelligence," "retarded," "backward," "feeble-minded,"—these terms being used interchangeably, all are designated in terms of intelligence ratings or Intelligence Quotient, as commonly expressed. The average or normal person has a rating between 90 and 110. This is confusing to many, accustomed to think of 100 as a perfect mark. Persons of average intelligence are rarely able to do outstanding work in major colleges or universities, if they are found there at all. There the mean IQ is usually very high. In the psychometric conception of the term, sub-normal includes individuals having an IQ of 70 or less, divided into three groups,—between 70 and 50, called "morons," between 50 and 25, "imbeciles," below 25 "idiots."

*Nature of Intelligence*—Scientific explanation necessitates defining the nature of intelligence in relation to other aspects of human activities and has stimulated much controversy among psychologists as to the true meaning of intelligence. Binet's conception emphasizes three characteristics of the thought process, (1) Ability to take and maintain a definite direction, (2) Capacity to make adaptation for the purpose of attaining a desired end, and (3) power of auto-criticism. Henderson and Gillespie state that "for medical purposes, it may be taken to mean the ability to understand one's environment and to make use of one's understanding, to earn a living." Clinical investigations have produced evidence showing that there are factors other than intelligence, such as emotional and moral defects, which render an individual incapable of "understanding the environment" and ability to make use of this knowledge in earning a livelihood.

*Criterion of Mental Deficiency*—Wells would favor the classification of mental deficiency,



"where the person's inability to meet the demands of his environment arises in the main from defective intelligence in the psychometric conception of the term. Whether the defective intelligence arises through congenital, traumatic, or toxic causes is merely academic, save that the cause is generally assumed to be present from birth or very early years, and a distinction from deterioration should be made. Behavior inadequate to the demands of the environment arising in other ways, as unbalanced emotional or instinctive life, intoxication, or diseases of the nervous system, is covered in other not less definite diagnostic classifications (psychoses, psychopathic personalities, etc.)" The definition in most general use is the one framed by the Royal College of Physicians and Surgeons in London and adopted by the English Royal Commission on Mental Deficiency, "A feeble-minded person is one who is incapable, because of mental defect existing from birth or from early age, (a) of competing on equal terms with his normal fellows or (b) of managing himself or his affairs with ordinary prudence." Terman, like Wells, prefers that classification be made upon the basis of psychometric findings, as the above definition is stated in terms of social and industrial efficiency. Therefore, an individual having an IQ of 68 might live in the hills where he could pass in his crude environment as normal. It becomes necessary, therefore, in clinical practice, when an individual is presented because of his social and industrial failures, not only to investigate his intelligence but his emotions and his environment.

*Inmates in an Institution*—Institutions like the State Training School were founded for the purpose of caring for mental defectives according to psychological ratings. The Reform Schools were established for the purpose of reforming the "bad" girl or boy. Society usually waits until they commit a crime, then the courts impose a sentence. Some of these "bad" boys and girls are sent to the Training School, usually by some agency or parents who fear for their future, before they have committed a crime. Their behavior in every respect implies mental deficiency, but psychometric tests do not reveal it. On the other hand, sub-normals are sent to Reform Schools. Who

are these "bad" boys and girls? They are children who have erred either because they themselves were constitutionally unfit to meet everyday problems of life as their associates or because external factors have borne down upon them with such intensity they were unable to stand the pressure. Commitment of such individuals to institutions often depends upon the persons or agencies handling the cases. From this discussion we understand that for descriptive purposes an individual's diagnosis cannot be confined to psychometric classification alone. The common additional term used to describe an individual who does not function as he should is "emotionally unstable," which does not describe what is wrong with him but merely conveys that he does not behave like the average. Thus a classification might be, "moron, emotionally unstable" or "normal intelligence, emotionally unstable," etc. So far, states have not provided well for the care and training of the emotionally unstable group. In some large cities there are special classes for them but very few. The poor man's child is usually found in state institutions of this sort.

*Classification According to Cause*—Previous discussion indicates that the sub-normal, according to psychometric ratings, are not a different species but different only in degrees of intelligence. According to statistics of mentally sub-normal, a large percentage are due to inferior germ plasm, the remainder are victims of organic causes and expressed in medical terms are "pathological cases." The former are known as "primary amentias;" the latter as "secondary amentias," differentiated from dementia in that the condition existed from birth or an early age. Under secondary amentia we find (1) Cretinism,—three groups,—cretins, semi-cretins, cretinoids; (2) Mongolism; (3) Hydrocephalus, congenital and acquired; (4) Microcephalus; (5) Paralytic types; (6) Epileptic types; (7) Syphilitic types; (8) Inflammatory types; (9) Sense Deprivation types.

A low degree of intelligence is no insurance against mental and nervous disorders to which children in general may be subject. Just as they may contract an organic disease, so they may be afflicted by disorders of the mind and nerves. Definite cases of psychoses have been reported by Hollingsworth in her studies of the

mentally deficient at Bellevue Hospital. While we have no typical cases in our institution, there are those who show such tendencies as being elated, flighty, violent outbursts of temper, with periods of blues, with no particular stimulus for it. Others have false beliefs, delusions, etc.

*Case Study No. 1*—A.G., girl 14, admitted 8 years ago. Mental age 3-Y 2-M, IQ 22. Five years ago, IQ 30. Shortly after admission was timid, docile, somewhat tractable. At that time, 6 years of age, made little effort to talk. One year later, continued quiet, beginning to talk and proud of personal appearance. Says, "pretty dress." Tendency toward stubbornness, which subsides before age 10. Able to do errands, tidy, cares for self and continues pride in personal appearance. Age 11, able to polish, assist in dressing other children and dressed herself. Never soiled, played with others in games, holds up head and talks. Learned to make beds in addition to other little errands but gets disturbed and upset if she cannot wear clothes she chooses. Age 12, destroyed three dresses in one week. Had to be put in coveralls. When angry, said: "I am going to soil myself." Periods of quiet alternating with irritability. Age 13, began to display very overt behavior. Without reason would bite, pinch, scratch, and choke others. During early morning hours would get jar of urine and attempt to dash in someone's face. Has smeared bed, door facings, and individuals with fecal matter. Possibly, if she had constant attention of one attendant, she might be different, as she is readily quieted by employees, especially if she likes them. Attendants having to give attention to others may account for her type of behavior. She has shown jealous tendencies. Because of tendency to spread fecal matter over building or children, at times, necessary to place her in a wire compartment, removing all clothing. She immediately evacuates rectum naturally or induces it, plastering her body, screaming during the process. Physician reports, on account of masturbation, examination was given to ascertain existence of local irritation. No adhesions or anything unusual found except hypertrophied labia minor. Triple bromides, dr. 1 td, prescribed. Continued this three

weeks, during which period she seemed to improve.

There are many others in the Institution older than this girl and about her age, with same IQ level, who have never displayed on any occasion such overt behavior.

*Case Study No. 2*—E.L. Committed by Court to Training School 1931, age 10-Y 6-M. Now aged 15. IQ 54, now 39. Family history presents picture in foreground of individuals low in intelligence, illiterate, unkempt, against background of poverty and sloth. Father aged 80, mother 47. Four siblings. First few months in Institution was not considered atypical. Then became object of curiosity in her building, did not play with other children, would close one eye, hide her face, laugh in silly way. Food had no appeal, occasionally would hide behind a tree, then get up and run as though something were after her. Employees unable to teach simplest kind of work. When polishing floor, would take the handle, laugh and grimace in manner above mention, move on, if told over and over. Later, refused to go to bath room unattended. Would cover herself entirely to escape being caught by someone under her bed. Often named one of the boys in the Institution. Would take her fore-fingers and thumb, arrange in a circle, hold to her nose for long periods as though smelling something, then rise, throw her shoulders back and rapidly walk away as though she had an objective. Early in year 1934 became very excitable; necessary to take her out of school where she had learned to write her name, and take part in other activities on pre-primary level. Repeatedly asked to go and stay with the boys. At other times said certain ones were after her. In June was permitted to go for visit. Continued this behavior at home. Was much worse upon her return. Would scream for hours at a time, "I want to go through"—"I want to go back." Often became so hoarse that verbalization was impossible. During this time, was extremely miserable. Everything possible was done to quiet her. Was taken for rides, given ice cream, candy, placed in different buildings, but to no avail. Finally, in August, 1934, was sent to the State Hospital for observation. Returned latter part of September. Hospital re-



ported no psychosis but abnormal behavior. Since that time, has been fairly quiet but stays by herself, grimacing, laughing, sometimes says, "Let me alone" when no one is near. Will call and beckon attendant. When latter responds, says nothing.

*Case Study No. 3*—M.H., girl about 33. Transferred from Girls Industrial School to Training School over 11 years ago. Classified lower level moron. Never learned to read or write. On parole six weeks four years after admission (seven years ago), returned because of severe eruption on hands. An unfortunate disposition, high-pitched rasping voice, emphasizes her virtues by telling on others. Interpretations out of proportion. First years at Institution, usually occupied position of trust such as assisting employees in clothes-room, responsibility for cleanliness of portions of the building where she stayed. Manifested keen interest and delight in her work but maintained superior attitude toward other girls. Prone to make reports which, at times, were taken perhaps too seriously by employees, regarding behavior of others, which did not promote popularity but drove others from her. From external attitude there was no indication of a handicap in this. A few years later, 1930, was placed in school building to work. Here again, moved about on superior plane, not only reporting misconduct of children but of teachers and visitors in the building. In privacy of the office stated clearly her disapproval of teachers who wasted paper, nails, etc. Reported certain visitors, particularly men, for aggressive acts. Now a decided change in attitude of other children toward her. Realizing their own welfare was not at stake, they viewed her behavior with disdain, then detached amusement. During year 1932-33, began to forget some of her duties, never neglected them. Gradually built up elaborate story centering around certain doctors and nurses she knew in her community. These people exist in the flesh but were not concerned with her. About this time introduced a husband. Now believes she was reared in a hospital by nurses and doctors. Gradually all of her family connections have been raised one by one to a high level of social and economic standing. Any time of day, no matter what she is doing or to whom speaking, she

radiantly gives some information regarding activities of someone in her imaginary world. This level of feeling is not maintained at all times. Has periods of depression, may refuse food, will sit for long periods paying no attention to surroundings. On one occasion polished one piano key for an hour. Another time stood rubbing a pitcher with cloth for similar period. During recent psychometric examination, when failures were evident to her, quickly referred to successes in other activities or explained failures. When she could not make change, buying 12c worth of candy from 15c, explained she always changed her money before buying. "My husband always told me to change my money—lots of times, he would order himself." History shows that mother was of inferior intelligence. Only under pressure does she recognize the fact that she ever had a mother, evading by saying, "I was raised by doctors and nurses." Mother spent some time in State Hospital, gave birth to illegitimate child. Social worker, 10 years ago, recommended that girl not be returned to her community, as subject did not approve of home conduct and rejected her family. In present mental state she has a glorious background but is not able to hold this at all times. Then she descends into depression. This alternating reaction is known as the catatonic type in well-defined cases of mental illness. At present, one could not make such a diagnosis of her.

We call attention to psychotic trends in certain kinds of speech defects more commonly found among sub-normal children than normal. Dr. Wallin states: "It is not surprising that there should be a close correlation between speech defects and mental defects. In view of the fact that the mechanism of speech is highly complicated, involving the harmonious integrated action of a number of delicate anatomical, physiological and mental adjustments." Such defects are found in children and adults of high intelligence, the theory being that it is muscular ataxis due to psychic inco-ordination, special reference being made to stuttering and lispings. One anomaly of speech is echolalia. Hollingsworth refers to this "curious tendency found in defectives who are mentally at what Binet calls 'the dawn of speech' to repeat or echo what is

said to them or in their hearing." With the development of attention and memory, in the young normal child, this gradually gives way to the formation of phrases and sentences which have meaning to him and those about him. Some psychologists and psychiatrists are not content with assigning this abnormality to arrested development alone but are of the opinion, from research, that it does not appear as a single symptom. Dr. Martz,—“In any event, most of these children will show certain eccentricities or disturbances of the mind beyond a simple hypophrenia. If they are not actually psychotic, they nevertheless reveal such signs and symptoms as are indicative of a psychotic-like condition. Many recent investigators, such as Greene, Richmond, and Earle, have drawn attention to the frequency with which supposedly feeble-minded children are found, upon careful examination, to have either a true psychosis or a fragmentary psychosis. Furthermore, it will be noted that relative mental status of these children is not always constant, as one might expect among mentally deficient but slowly changing, generally in the same direction of regression or deterioration. In these low-grade schizoid cases, the echolalia is not necessarily an outstanding factor but rather one in a whole chain of distinct symptoms which enter into the clinical picture.”

*Case Study No. 4.*—A.B. Boy 13, admitted to Institution 2 1-2 years ago, then 11 years old. Unable to co-operate in psychometric examination because repeats what is said to him. This not only occurs in a normal setting but at the building. If he wants anything, makes a noise but is able to repeat verbatim in a meaningless monotone anything that is said directly to him. Does not repeat parrot-like conversation heard while in a group, as he appears concerned with himself. Has a tendency to be withdrawn (schizoid), will get up and run about the room as though obeying a compulsion. The ill defined erratic movements exhibited in habit-training class have given way somewhat to order. Continues to show distress both in school and at the building. With the palms hits his head in rapid staccato manner. Often takes hands of attendant or teacher as though trying to reveal some inward feeling. Is very fastidious about his clothing, taking extraordi-

nary care in arranging it at night. Refuses to wear clothes not properly repaired. Sneaks into dressing room and secures things that suit him. Will not take socks that do not match. Can bathe and dress himself. In every respect, is the cleanest, neatest boy in his building. If things go wrong on playground, runs to an attendant, buries his face in her lap, makes a noise. After they investigate, he is all right. This condition is known as echolalia, but there are other symptoms beyond this in the clinical picture which betray abnormality.

The following represents a case of speech anomaly much more benign in character :

*Case Study No. 5.*—C.Q. Admitted to Institution age 12, four years ago, now 16. Unable to get psychometric rating. Conversation consists of isolated words, few in number. Accompanied by elaborate gestures and facial expressions. Why he does not talk is unknown. No evidence of impediment, articulates and enunciates clearly words that he uses, and from his behavior evidently understands many other words. The following illustration, chosen from many, is proof: One time, broke a victrola record. When reprimanded by School Principal, registered distress in facial expression. While talking, Principal fitted broken pieces together. The expression of anxiety gave way to delight; pointed to the record and said, “Joe” (boy who did repair work), at the same time pointing in direction of shop. Then spanked himself, put his arm affectionately around Principal. Interpretation: Repair record, punish him (although not punished in Institution, evidently had this experience before arriving), then make up,—everything all right.

Abnormalities of behavior can be traced through all levels of psychological classifications, sub-normal, normal, and super-normal intelligence, not limited to inmates of Institutions. Through every strata, regardless of intelligence, there are those individuals who make inadequate response to their environment. The affective side of life supersedes the intellectual. Therefore such individuals and those with nervous disorders of pathological nature are anchored to lower levels of efficiency and in so far as their total response is concerned, may as well be defective in intellect. Even though the psychological rating is relatively high, these in-



dividuals operate on a comparatively low level of efficiency and cannot be properly trained in the conventional schoolroom; unless the school is designed to fit their individual needs, the classroom will be in disorder and they regress.

In the Institution we have one little girl, age 11, dull normal, who has to be alone for practically all of her schoolwork. She is a hyperactive, dramatic little figure who initiates a colorful environment if it does not appear naturally. Ethics and codes are unknown to her. In the past has built strong defense mechanisms to meet attacks made upon her when she misbehaved. Her characteristic reaction has been, when reprimanded or given a negative reply to her request, to run away, violently attack someone or destroy something that is nearest her.

The following case study represents another girl of comparatively high intelligence who has been unable to maintain her equilibrium either in society or in the Institution, as well as some others of much lower intelligence rating:

*Case Study No. 6—L.T.—girl 16 years 6 months. Admitted over 6 years ago. Dull normal. On Achievement Tests, all grades above 7th (almost 10th in literature) except arithmetic, grades 3. Plays third and fourth grade music on piano. Memorizes well. Improvises. Plays mouth harp and dances. If one could stop there! She is a bundle of contradictions. From October to December, 1928, 9 years of age, hospitalized at Children's Hospital, Detroit, where family were for a short time. Both parents natives of this state. They made following report: "Diagnosis: Chorea and Endo-carditis. Patient extremely nervous when admitted to hospital. During stay told of hearing voices from the wall at night talking about herself and doctors attending her. Refused to say what she heard but insisted she heard them talking, also that she heard knockings on the wall." After family returned to South Carolina, psychiatrist from State Hospital urged that application be made to State Training School. Then began a bombardment from parents, social workers, teachers. Finally, petition signed by 7 members of County Delegation. Sent from office of Probate and Children's Court with following reasons for immediate admission: (1) She had been caught*

*stealing; (2) Had to be removed from Special Class in School, gave so much trouble; (3) Ran away, picked up by police; (4) Had been to Salvation Army begging, taken home by them. In addition to taking things, telling stories, etc., she is never quiet. There are long drawn-out audible sighs, queer noises such as clearing throat, coughing, jerking in various parts of body. These do not always appear at one time. One gives way to another. She cries, screams, curses when excited. Because of her tendency to leave the Institution, which she has several times done, it is necessary to keep her under constant supervision, under which she chafes. It is a vicious cycle. She probably runs because of her restlessness. Therefore, must be closely supervised, which increases tension. She is good-natured and affectionate but even when showing such disposition, may have a pair of scissors concealed preparing for liberty. Will voluntarily promise (no one requesting it) never to do that way again. It has been proven when at liberty while at home or away from the Institution without leave, that she did not make a constructive move. In fact, it was her overt behavior that revealed her identity. She has what might be intrapsychic ataxia, inco-ordination between intellect and emotional functioning. Because of her strong delight for music and being an exhibitionist, piano and dancing are comparatively easy. Little or nothing has been said to her about practice, although it is necessary to keep a girl in the room with her during such periods so she won't have the piano in her pocket when she leaves. On one occasion was found with the top off, ready to go down inside. Another time plundered cabinet in the room and took pair of scissors. Unless door is closely guarded, runs out and explores or leaves building.*

The average person, even the learned, does not have patience with the child who has ability to learn and won't behave. If he can learn this, why can't he learn that? Why does he tell stories? Why does he steal? Why is it that he does not respond to talks or even severe punishment but does the same things over that he has promised not to do? Children who present abnormal behavior should receive attention from doctors, psychiatrists, or psychologists during the incipient stages. If they can-

not be adjusted in homes and public schools, they should be sent to an Institution before they become battle-scarred with multiple undesirable reaction patterns that take years to undo. Training such children is not an exceedingly difficult problem if they are in very small groups. Information must reach them through any of the sense organs that prove the best avenue for carriage. The formal, conventional school-room is no suitable place for them.

There is a large group who move quietly through our training department, evincing no contra-behavior, or feeling, toward work. They seem pleased with the opportunity to learn all they can. Such children could be trained in the public schools if those institutions provided proper kind of training for them and if they had good homes. Both groups of children mentioned above are given standard achievement tests each year. Their rating are very irregular,—example, G 7 reading, G 6 history, G 8 spelling, G 4 arithmetic, etc. It is surprising how far some of them can go when unleashed to advance at will. This uneven classification is not peculiar to sub-normal children, as has been proven with progressive school methods with normal and super-normal children. There is another large group in training who are potentially incapable of assimilating any kind of academic work. Aside from aesthetics, it is economy to establish and perpetuate classes for this type. It took about five years for one boy to keep dry long enough to sit in class. Now he draws pictures, says little nursery rhymes, keeps his clothes buttoned in class and at the building, looks forward to the school period, expresses delight to matrons on returning to building. He might still be sitting on the floor rocking back and forth in wet clothes but is about as independent in his environment as you or I in ours. Another group, incapable of doing academic work, are given more complex forms of handwork and recreation. In the Institution, four groups receive training,—stable, unstable, manual group, habit-training group. We use handwork of all kinds, music, dancing, recreational activities, not only to develop skills but as therapeutic measures with individual approach, to build up self-respect and confidence through doing one or more things well. This does not necessarily imply special ability in

these skills but special interest. It is the usual experience of a layman visiting the Institution, after seeing completed handwork, hearing a group singing a cantata in three or four parts from memory, to conclude that mentally defective children have special aptitudes. This is an erroneous conception. Memory of this particular kind (rote), accomplishment of activities requiring skills in motor co-ordination, does not involve the higher thought processes in which they are deficient. Saying it another way, these children might be unable to understand their environment to the extent of being able to maintain themselves independently of society.

*How and What Defectives Learn*—Those in higher levels of intelligence, but emotionally handicapped, have been discussed briefly above. Can mental deficiency be overcome? With primary amentia, due to inferior germ plasm, heredity,—no, but they can be trained if the intelligence is high enough and there are no emotional handicaps, even though the ceiling be low. Secondary or pathological cases are always doubtful. In some of them, medication, surgery, glandular and nutritional treatment may accomplish much. These individuals often profit by well-rounded manual and physical training. With the third group, who behave abnormally but whose intelligence rating is comparatively high, or even normal, emotionally unstable, the chances for rehabilitation are fair, particularly if taken in time.

Contrary to the prevalent idea of laymen, an institution does not consist of a regimented, gelatinous, negative mass, unaesthetic in appearance, which sooner or later dulls the wits of those who care for them. On the other hand, the entire population presents an interesting, colorful, mosaic design which challenges ingenuity in the interpretation and meaning of its components. To those with a flash of humor, a flare for research, coupled with scientific training, these individuals,—like all humans,—make life interesting.

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#### DISCUSSION

Dr. E. L. Horger, Columbia, S. C.

Dr. Whitten has brought to us a great deal of valuable information in the time allotted. He has dealt with the subject in an instructive manner and his presentation of the subject is extremely interesting.



In regard to testing the intelligence of the individual, there are various methods employed. The Simon-Binet test is greatly used. These tests are of value, however, only when used by one who has had training in their use. Very little value can be attached to the information obtained when the tests are made by one who is not qualified.

Feeble-mindedness, as stated, is a congenital condition, or it may be the result of trauma to the nervous system or severe illness in the early years of life in which there results an arrested development of the mind. It is not considered an acquired condition; where, on the other hand, the psychoses are acquired. The lack of intelligence in the feeble-minded is due to the lack of development, while in the psychoses it is due to a deterioration of the mind.

The mentally sub-normal individual in many instances has the same motivation or desires as the normal individual; however, is not capable of obtaining his desires according to the demands made upon him by society. The feeble-minded individual has difficulty in adapting himself to the demands of society. It is very difficult to train him and often many of his kind become delinquent. It has been stated that there seems to be no question there is a considerably greater proportion of persons of low intelligence among the delinquent than among the non-delinquent population.

Dr. Whitten has presented six very interesting cases. These cases present symptoms which are suggestive in most cases of some psychoses. In regard to psychoses among the feeble-minded, many cases do develop distinct psychoses and are placed in some psychotic group; for example, psychosis with mental deficiency. It is possible that a moron will develop into a case of dementia praecox or into some other type of mental disorder. Certain authorities claim that a large percentage of feeble-minded individuals have epilepsy, therefore one can readily see that a feeble-minded may develop an epileptic psychosis.

To many it may seem that feeble-mindedness is a hopeless condition. If one will take into consideration the home, the neighborhood, the school and the environment and will give these mentally sub-normal individuals a chance, proper training and special instruction he will find that many of them can be helped. Little can be expected in the home, because the majority of the parents are feeble-minded and are incapable of creating a good environment. Most of the help must come from the schools and the community. Employment and recreation should be provided. If the feeble-minded become problems and are unable to do satisfactory work under special instructions, then they should be placed in some institution and given special care and instruction.

## THE CARE OF ACUTE HEAD INJURIES

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In a discussion of "The Care of Acute Head Injuries," we have to appraise the subject with its rapidly increasing importance. Our highway accidents are responsible for a great increase in head injury cases.

Last year there were 36,400 automobile accident cases. The National Safety Council announced 99,000 accidental deaths for 1935. The majority of these traumatic deaths are due to injury to the head.

Swift states there are approximately 112,000 cases of skull fractures annually in the United States.

We have seen a great change in the care of head injuries in the last twenty years. The medico-legal aspect of these cases has assumed considerable importance particularly in regard to keeping careful records.

Let us first consider the less serious head injuries. Lacerated wounds of the scalp should all be treated as infected wounds. The wound should be loosely sutured and drained. In those cases where tight sutures are necessary to control hemorrhage the suture should be removed within forty-eight hours.

The stab wounds inflicted with such instruments as ice picks are becoming more common and are rather infrequently recognized. There is little external evidence of the small wound of entrance. The patient is frequently under the influence of alcohol, and we are perhaps prone to attribute his condition to intoxication. These wounds should always be considered as potentially dangerous. We have had cases in which the pick penetrated the brain with no evidence of paralysis or any manifestation of injury to the central nervous system. A number of cases have been reported from routine necropsies by the office of the Chief Medical Examiner (2) in New York City.

All wounds of the head where there is evidence of soil contamination should receive the prophylactic dose of tetanus antitoxin because tetanus following wounds of the head is more likely to be fatal.

A craniocerebral injury is the most serious injury of the head. It is in this type of injury

that so much has been done in recent years by conservative treatment, and head injuries should be considered serious until proven otherwise. All patients with acute head injuries should be quietly admitted to the hospital, or in some cases should be kept at a home near the scene of the accident. The less the patient is moved in the first twelve to twenty-four hours the better it is for him. We should not allow friends or meddlesome neighbors to cause us to subject our acutely traumatized head cases to an early unnecessary and sometime valueless x-ray examination. This can be done at a later and safer time. A most important factor in the handling of these cases is the choice of a nurse. She should understand the psychology underlying the recovery from head trauma.

The control of visitors and family must be considered. They should not be allowed to discuss the patient's injury and possible future disability. Post-traumatic psychosis or hysteria is often produced by some suggestion implying permanent disability. Let us remember that an injury to the brain leaves for a time a sick mind capable of running the gamut of imagination.

Because of the various degrees of severity the treatment of craniocerebral injuries cannot be standardized. I believe that each case is a case unto itself.

In order to treat these cases properly, a bedside study of the patient should be made. More can be learned in the first few hours concerning the prognosis and after treatment of the patient than at any other time. It is in this period of five or six hours that we must try to determine if there is an extradural hemorrhage, for many authorities believe extradural hemorrhage is the only indication for an early operation. An important point in the diagnosis of extradural hemorrhage is a lucid interval between the initial and subsequent loss of consciousness. The patient is at first unconscious or semiconscious, but later gets up, walks around, and then lapses into unconsciousness again. He has a dilated or fixed pupil on the same side as the hemorrhage. The patient may have paralysis beginning in the face and extending to the arm and possibly to the leg. Convulsions may also follow in the same order. Such a patient should have an immediate sub-

temporal decompression and a ligation of the middle meningeal artery or some of its branches.

In craniocerebral injuries increased intracranial pressure is always due to hemorrhage or edema. There are varying degrees of brain trauma causing intracranial pressure(3). Let us think of the head injury where there is no fracture demonstrable as a "black eye of the brain." We have seen a slight blow cause minute petechial hemorrhage around the eye, and so the same condition in the brain gives the picture of concussion. The concussion cases usually clear up within a few hours or few days and the only treatment necessary is rest.

In the more severe cases the surgeon should determine how completely nature is compensating for the increased intracranial pressure. Space compensation is the principal function of the cerebrospinal fluid. We have seen large tumors removed from the brain where this physiologic compensation of cerebrospinal fluid had taken care of the patient as the tumor grew and done it so well that the patient was practically symptomless.

It is the duty of the physician to observe this degree of compensation, noting particularly the following:

1. The state of consciousness of the patient, and this is most important of all data. The fact that the patient is unconscious means that the cerebrospinal fluid is not able to compensate for the pressure. The depth of the coma indicates the degree of seriousness of the patient's condition.

2. Restlessness is a symptom that might tempt one to give large doses of morphine. This would be the same as masking the symptoms in an acute abdominal emergency.

3. The pulse rate will remain slow and regular as long as the intracranial pressure is being compensated. A very slow pulse, around 40, or a pulse that is changing from 60 to 100 every few minutes means a losing battle for compensation.

4. The respiration remains slow and regular as long as there is compensation, but as compensation becomes broken the respiration becomes rapid, shallow, and irregular. Cheyne-Stokes respiration indicates marked intracranial pressure.

5. The change in temperature is a valuable



guide. A rectal temperature should be taken every thirty minutes. When the temperature remains under 102, the pressure is being compensated—each degree above that means increasing danger.

It is in those patients with fracture of the skull and increased intracranial pressure that a most careful and persistent study should be made. The changes in the patient's condition appear so quickly and the time for favorable action is so short that the patient's life, in a measure, depends on the capability of the physician, and by this I do not mean necessarily that a specialist should be in attendance, but a doctor who will give the patient his personal attention and act promptly upon his judgment.

The treatment of shock is the first consideration with few exceptions, and must be brought promptly under control. An emergency dressing must be applied to head wounds, but no wound repairs should be done that will further shock the patient. In some cases 50 c.c. of 50 per cent glucose solution may be given intravenously. Undoubtedly the most efficient treatment in acute craniocerebral injuries with or without increase in intracranial pressure is rest.

Those patients who show evidence of extradural hemorrhage with rapid increase in pressure should have immediate operation with ligation of bleeding vessels. This type of case represents a small per cent of the serious ones.

The cases of severe trauma to the brain with increasing intracranial pressure should be treated with rest, dehydration, lumbar puncture and decompression.

Rest means insuring a quiet room and a special selected nurse, with no unnecessary changing of clothes and baths. Under no circumstances should an x-ray of head be made while patient is still suffering from shock.

Dehydration can best be accomplished by limiting the intake of fluids to 600 c.c. in 24 hours, by administering hypertonic glucose solution, and giving magnesium sulphate. Fay(4) says: "When the pulse pressure approaches the pulse rate, that is the time to dehydrate."

I do not believe in too early and too frequent use of lumbar puncture. It should never be used during the period of shock or to relieve pressure due to subdural or extradural hemor-

rhage. In those cases where rest and dehydration do not relieve the symptoms of increased intracranial pressure, lumbar puncture should be done. Its repetition should be determined by the results. Do it in those cases which in your judgment are not apt to go on into medullary compression, and do not hesitate to drain 20 to 30 c.c. of spinal fluid at a time. It must be remembered the brain cannot long be subjected to pressure that interferes with cerebral circulation without causing cerebral degeneration or death.

Death is often due to pressure exerted upon the vital centers situated at the base of the brain in the region of the third ventricle, the medulla and pons.

The cerebral hemispheres and cerebellum are not so important in the continuation of life, but are quite important in the intelligent reactions and post-traumatic behavior of the patient. It is in this region of the brain that prolonged pressure causes degenerative changes that are later manifested by psychic changes, loss of mental function, and apparent paralysis and anesthesia. Damage to these centers of intelligence causes prolonged post-traumatic mental sequelae, a condition distressing to the patient and family, and often of serious significance.

Decompression is being less frequently employed—usually only for the specific purpose of removing some localized pressure, or for stopping hemorrhages. One indication for prompt surgery is a compound fracture of the skull where foreign bodies, fragment of bone, and hair may have been driven into the brain substance. Simple depressed fractures can be elevated under local anesthesia after a few days when the patient is out of danger.

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## CARDIAC PAIN

By

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In considering the subject of cardiac pain at this time no reference will be made to that caused by primary pericarditis of acute infections, nor will the symptoms of syphilitic aortic disease be discussed except as related to differential diagnosis. The subject matter will be confined largely to symptoms referable to disease of the coronary arteries.

The symptoms of coronary pain are best divided into two related but distinct entities: angina pectoris and coronary occlusion. Angina pectoris as originally described by Heberden refers only to precordial pain, but in this instance the term will be used to describe pain located in any region having its origin in the heart. Angina pectoris is predominately a disease of the middle and higher social groups and is quite frequently seen among professional people. It occurs far more often among men than women. The greatest number of cases fall into the middle and older age groups, but it also occurs occasionally in the twenties and thirties. The etiology of the pain is still discussable, but the most widely accepted theory is that it is based on coronary artery disease in the large majority of cases. Keefer and Renik (1) in 1928 critically analyzed the various theories as to the etiology of anginal pain, concluding that anoxemia of heart muscle was the only acceptable basis of the symptom. The pathology most often found is atheromatous disease of the coronary artery or the sinus of Valsalva. Syphilis produces relatively very few of the cases of actual coronary disease, but disease of the aorta may cause an obstructive lesion at the mouth of the coronary artery, producing the same effect. Aortic insufficiency with lowered diastolic pressure has been thought capable of producing sufficient anoxemia of heart muscle to cause anginal pain(1), but this mechanism is doubtful. Certain cases of rheumatic heart disease produce a real arteritis of the coronary arteries(2) with decrease in the

amount of local blood flow. However, so many cases of extensive atheromatous disease of the coronaries, with almost complete obliteration of the vessels, come to autopsy without any history of angina, and, also, cases of definite angina fail to show any evidence of coronary disease at autopsy. Because of this it is reasonable to suppose a functional basis for the disease, either alone or in association with organic disease, by reflex stimulation through the vagus and sympathetic fibers of the cervical and upper dorsal ganglia. The real functional relationship of the sympathetic and parasympathetic nerves supplying the heart and coronary vessels is not definitely known. As yet in the experimental stage, further knowledge on this subject is awaited with considerable interest. Severe anemias are at times the predominant factor in the production of angina(3) and where the anemia is not the sole cause it may be the precipitating factor. Hypertension per se cannot be assigned as a cause of angina because although frequently seen in association with cardiac pain, a great many of the cases of angina occur in individuals with normal or even low arterial tension. There may or may not be a previous history of cardiac disease. There is often a history of dyspnea on exertion, but it is unusual for frank myocardial insufficiency to precede angina. It is even notable that where decompensation occurs in a patient afflicted with angina, the attacks of pain often disappear.

The classical attack of angina is easily recognized. During or shortly after increased physical or emotional stress, in a middle or old aged man, there is an abrupt onset of severe pain which is described as agonizing, vice-like, knife-like. Beginning over the precordium it radiates to the neck, left shoulder, and down the left arm. The patient is motionless, pallid, and sweating, and has a fear of impending death. The pulse is accelerated and the blood pressure is generally elevated above its usual level. There is no dyspnea, although the patient complains of a smothering sensation. The pain is severe for only a few minutes, and if the patient remains at rest it passes off, leaving slight soreness over the precordium. Within a short time after the attack the patient may appear normal and even go about his usual activities.

Angina often is quite atypical in the individ-

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ual it attacks and in its manifestations. It is these atypical cases which are clinically important from a diagnostic standpoint, as with proper evaluation of pain life saving measures may be taken. The diagnosis often depends entirely on the history and a careful inquiry should be made. Family history of some form of heart disease is frequent. Upper abdominal distress with gas after meals and on exertion is a common method of expression of coronary disease. This apparently is dependent on a close relationship of the reflex pathways of stomach and heart. The symptoms are generally referred to by the patient as indigestion. Pain of coronary disease frequently is not referred to the precordium but is felt in the right chest, the right shoulder, the anterior or posterior aspect of the neck above the fourth and fifth dorsal spine, or the left jaw. The pain may be slight and fleeting in nature or rather persistent. The discomfort may be of such minor degree that months may pass before the patient consults a physician. There is one important fact to be kept in mind; wherever the pain may be localized it comes on with exertion, fatigue, or emotional stress, and is relieved by rest.

The physical examination may or may not afford corroborative data. An associated hypertension is found in a number of cases, particularly in the younger individuals, but the heart may not be enlarged or show any evidence of muscle failure. Except during the attack the pulse rate and rhythm is usually normal. The retinal arteries often, but not necessarily, show significant changes. Patients above fifty almost always show some evidence of arteriosclerosis, but this is so widely found that it can hardly aid in the diagnosis of angina. Changes in quality of the heart sounds and a gallop rhythm, when present, give a definite substantiation of heart disease. Except in aortic insufficiency, murmurs are of no significance. X-Ray of the heart is only of value if it shows evidence of cardiac enlargement, and then this is only corroborative data. An electrocardiographic tracing is helpful in sustaining the diagnosis where evidence of myocardial damage can be demonstrated. Electrocardiographic evidence is however notably unreliable, and a normal tracing is quite consistent with angina. Levine's technique(4) of observing t-wave

changes in serial electrocardiograms following the injections of adrenalin appears to offer dangers in the patient with real angina, but may be found useful in certain instances. The use of a tablet of nitroglycerine has been useful to me as a therapeutic test in vague pains in the thorax, upper abdomen, and neck. When prompt relief is obtained, even without a recorded fall in blood pressure, I become more than suspicious of coronary origin of the pain.

It is to be remembered that atypical angina is a common disease and frequently offers considerable difficulty in diagnosis. All of us have experienced the shock of seeing one of our patients develop a coronary occlusion while under treatment for dyspepsia, neuritis, or psychoneurosis. Where any doubt exists as to the nature of suspicious pain, a careful investigation and evaluation of symptoms should be made; and unless the symptoms can be satisfactorily explained, the case should be managed as angina for at least a period of time.

The differential diagnosis of typical angina rarely offers difficulty. Pseudo-angina in a psychoneurotic individual who has observed anginal attacks in a friend or relative may simulate the disease closely, but not closely enough to confuse the careful clinician. The atypical attacks must be differentiated from the psychoneuroses, gall bladder or gastric disease, myositis, intercostal neuritis, and at times arthritis of the spine. Syphilitic aortitis with or without aneurysm frequently produces substernal discomfort that must be differentiated from coronary disease. The Wassermann reaction and fluoroscopic of the chest are quite helpful. Lesions of the diaphragm may also cause pain with the same distribution as angina. Here again a fluoroscopic examination is quite revealing.

The treatment of angina varies considerably in amount and extent in accordance with the severity of the symptoms. Treatment of the immediate attack demands complete rest, administration of nitrite and, when necessary, morphine. Follow up therapy should, as far as possible, be individualized to fit the needs of the patient. In general, the patient should have an added amount of rest and should be protected from over-exertion, fatigue, and emotional stress. The habits of the patient and his daily regime of life should be carefully reviewed

in an effort to uncover any precipitating causes. Angina is notably a forerunner of the more dangerous coronary occlusion, and the patient should be definitely impressed with the importance of these measures. The question of whether the patient should be informed of the diagnosis remains a problem in each individual case. However, in most instances the patient himself soon becomes conscious of the condition and in only the exceptional case can the diagnosis be withheld for any great length of time. The diet should be bland and of relatively low calorie, particularly if there is an associated obesity. The total amount of food should be divided into five rather than three meals during the day. The fluid intake should be sufficient to prevent dehydration. Constipation should be strictly avoided without drastic purging, and mineral oil or a small morning dose of a saline laxative is useful. The drugs of the theobromine group apparently have a dilating effect on the coronary vessels (5) (6), and have a definite place in the diminution or prevention of attacks in quite a number of cases. Any contributory condition such as anemia or hyperthyroidism should receive adequate therapy. Digitalis has no place in the treatment of angina pectoris, as it has been shown to have the effect of diminishing coronary flow (7) (8). Syphilis, if present, should be treated with extreme caution, as the occurrence of a Herxheimer reaction might be fatal. The surgical treatment by evulsion of the cervical and upper thoracic sympathetic ganglia has a certain element of danger, and experience with the procedure is at present limited. There is considerable current interest in a surgical approach to all diseases related to the sympathetic nervous system(8), and the future developments may offer selected patients a greater degree of relief than medical regimes afford. Total extirpation of the thyroid has proved beneficial and is being recommended in certain selected cases(10). The operative mortality among these cases is necessarily high, the eventual outlook doubtful, and further observation of the procedure is necessary before it becomes widely applicable.

Coronary occlusion is seen with increasing frequency as the years advance beyond middle life and is a common affliction in old people

with heart disease and arteriosclerosis. However, it is not uncommon below middle age and among Master's 75 cases 6 were 40 years or less(11). The disease has aroused any great interest only in the past twenty years. Rarely reported before that time, more careful diagnosis in heart disease has shown coronary thrombosis to be a common form of heart disease. Frequently diagnosed as acute indigestion in the past, it has, and continues to be, one of the principle causes of sudden death. Pathologically an anemic infarct of the heart muscle; it is, except in rare instances, dependent on a thrombus in situ and only rarely is an embolus from a distant focus found. The left coronary artery or one of its arborizations is the most frequent site of the thrombus. The size of the infarct depends on the site of the thrombus and the extent of the collateral circulation developed. An actual rupture of a coronary artery may well cause the same effect, but such a condition is very rare. By far the greatest number of infarcts are dependent on degenerative atheromatous disease of the coronary artery or the contiguous portion of the sinus of Valsalva. Syphilis and rheumatic heart disease play only minor rolls. Hypertension cannot be assigned as a primary cause of the disease except as it may be the cause of the coronary artery disease and place the heart under difficult working conditions. The incidence of previous anginal attacks is quite high, but in a small percentage of cases an occlusion is the first indication of coronary disease. Frank cardiac decompensation precedes coronary occlusion at times, but the more frequent premonitory symptoms are angina, slight dyspnea or exertion, orthopnea and indigestion, either singly or in combination. A large percentage of cases have their onset while at rest or after only moderate exertion. Apparently food intake is closely related to the occurrence of coronary occlusion, and in Phipps'(12) series of 437 cases 50 per cent occurred within an hour after eating. A small percentage of cases, highly fatal, occurred during sleep.

The pain of coronary occlusion, varying considerably in its severity, is usually very intense, but occasionally may be only of slight degree. The distribution of pain is the same as in angina pectoris, but is most often confined to



the precordium and left arm or the upper abdomen. The patient with a coronary occlusion in contrast to angina pectoris is usually restless or even excitedly active. Dyspnea, cyanosis and some degree of circulatory collapse is customarily present. Vomiting is frequently an accompaniment early in the course and may persist for several days. Where the infarct is quite extensive, circulatory collapse, pulmonary oedema, and shock rather than pain will be the presenting symptoms. Small infarcts, because of the mildness of the pain and paucity of circulatory collapse symptoms, are often passed up as simple angina. The pulse may be rapid but is often quite slow. The area of cardiac dullness is not necessarily increased. The heart sounds usually are of poor quality, the blood pressure falls below its usual level and in extensive lesions is quite low. Pericardial friction is heard in about one third of the cases in twenty-four to forty-eight hours. After a subnormal period the temperature rises to about 100 degrees F. for a few days. Typical electrocardiographic changes as described by Pardee (13) appear within 24 hours and persist for a prolonged period of time.

The course of a coronary occlusion is quite variable and necessarily depends on the location and extent of the resultant infarct and the degree of collateral circulation that can be established. The onset may be quite abrupt or more gradual with increasing symptoms over several hours. When the occlusion is sufficiently large, death is almost instantaneous or follows within a few hours. In less extensive occlusions the patient may linger on a few days or a week before death. But in most instances if the patient survives the first stormy 24 to 48 hours, the symptoms tend to subside, the heart establishes a more stable function, the blood pressure tends to rise, and the chances for recovery are good. Most clinicians reporting cases cite a mortality rate of 35 per cent to 65 per cent. However, because of wider interest in the disease and the recognition of the mild cases, recent reports call attention to a much lower mortality rate and one author(11) reports the surprisingly low rate of approximately 10 per cent. Recovery is accomplished by replacement of the infarct by fibrous tissue leaving a firm scar. Restoration to a considerable degree of health

over a period of several months to years is not inconsistent with the disease, and White(14) reports one case enjoying relatively good health for 17 years. There are some rare instances where patients who have been suffering from recurrent angina are definitely improved following the obliteration of the offending artery and its transference into scar tissue. However, the patient who recovers from one coronary occlusion has a grave tendency to the development of other similar lesions, and the rate of recurrence is high.

There are three complications which are notable in the cases of coronary occlusion which survive the acute phase. The development of mural thrombi and embolic phenomena may occur within 48 hours to two weeks and, depending on the location and size of the embolus, offer a varying degree of danger. Sufficient heart muscle may be permanently damaged so that chronic myocardial failure will result and the patient become a chronic cardiac cripple. Rupture of a ventricle is infrequent and may occur several weeks or longer after the acute phase and is necessarily fatal.

The differential diagnosis of the typical case and its course should offer no difficulties. The immediate differential from angina is made on the restlessness of the patient, the prolongation of the pain, and its lack of response to nitrites. Fall of blood pressure, cyanosis, and circulatory collapse do not occur in angina. In cases of sudden death clinically ascribed to coronary occlusion, autopsy at times discloses rupture of an aortic aneurysm or the heart itself. When the pain of coronary occlusion is confined to the epigastrium, it may simulate an acute surgical condition. A previous history of angina, knowledge of previous blood pressure levels, and an electrocardiographic tracing are quite helpful in settling the problem. Also helpful is the fact that in coronary occlusion the pain although constant is subject to exacerbations at intervals of several minutes to an hour. Cases of sudden circulatory collapse with pulmonary oedema should always be suspected of having a coronary occlusion although there is no complaint of pain. The occurrence of persistent pain in other than the precordial portion of the thorax, in any patient with known heart disease, should be viewed as definitely

suspicious, and a precordial friction and slight fever should be looked for. The more frequent use of the electrocardiograph will reveal evidence of coronary occlusion in many cases that would otherwise be overlooked.

Treatment of a coronary occlusion is of the emergency type. Sufficiently large amounts of morphine should be administered to control pain and restlessness. The initial dose should be half a grain, repeating with a smaller dose as necessary. Caffeine can be given to counteract the depressing effect of morphine on the respiratory function. The use of nitrites has been considered harmful by some clinicians (15, 16) and as they certainly offer no relief should be withheld after the diagnosis is established. It is difficult for the physician to withhold adrenalin in those cases with severe collapse symptoms, but the drug may be harmful in overstimulating a myocardium severely damaged. Digitalis certainly has no efficacy in the early treatment of the disease, and it may be harmful, as it has been shown to act as a constrictor of coronary arteries (17). When pulmonary oedema develops, atropine is useful and a venesection of 250 c.c. or more may be valuable. The patient should be placed in a sitting position so that respiratory motion is facilitated. Blankets and heat may be necessary on the extremities, but only light covering should be allowed over the thorax. The administration of oxygen may be gratefully accepted by extremely dyspneic patients. Nothing but cracked ice should be given by mouth for 24 hours or longer and the bowels kept immobile. Following the acute phase the patient should be kept at absolute rest for six weeks or longer. Opiates or sedatives should be given as needed. The diet should be bland, of low calorie, and taken frequently in small amounts. After three to four days give mild laxatives and small daily enemas to prevent straining at stool. The patient is often quite dispondent and should receive considerable encouragement and moral support. The theobromine group of drugs are probably of some value as a coronary dilator (5) in the further treatment. Digitalis should again be avoided unless congestive failure supervenes. After recovery the patient should lead a fully protected life, avoiding any strenuous physical or emotional strain, and the same precautions

as to diet should be taken as in the case with angina.

Summary: The various causes of angina pectoris on a basis of anoxemia of heart muscle have been discussed and the importance of recognition of the disease in its atypical form stressed. Treatment should be instituted principally along the lines of protection from physical and mental stress. The theobromine group of drugs may be useful and digitalis is to be avoided.

Coronary thrombosis as an important form of heart disease is being increasingly recognized, and with the institution of proper therapy the mortality rate observed is considerably lower than it was formerly thought to be. In contrast to angina pectoris the patient is active, pain is prolonged, and evidence of circulatory collapse is usually present. The importance of morphine rather than nitrites is to be stressed. Prolonged rest and attention to diet should be prescribed after the acute phase.

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### DISCUSSION

George R. Wilkinson, Greenville:

The reader has made it quite plain that pain in the heart is due, so far as our knowledge goes, to two great causes only: namely, angina pectoris and coronary occlusion. The mechanism for the pain is

chemical, induced by mechanical means. The idea that pain can be produced by pressure alone holds for the heart as well as it does for the rest of the body. Whether it be a spasm that shuts off the blood supply or a mechanical device in the nature of an embolus, the pain comes from the lack of blood to the part. The chemical change that comes from the reduced amount of oxygen in the tissues produces a chemical pressure which in turn causes pain.

The treatment is directed toward maintaining an even flow of blood. First, the demands for more blood are reduced, or mitigated. Second, agents are used that increase the flow during the coronary crises.

In the experience of the discussor, the following disorders have, at times, produced pain which in some measure simulates the pain due to coronary disease in general: mediastinal, lung, and oesophageal tumors; diverticuli of the oesophagus; diaphragmatic hernias; pulmonary embolus; cervical arthritis and upper thoracic arthritis; pleurisy and pleurodynia—all above the diaphragm. Below the diaphragm, gall-bladder disease first and foremost, duodenal disease, and diseases of the pancreas.

This is indeed a timely subject and of especial interest to physicians themselves, since coronary disease is so often the cause of their demise.

## NEWS ITEMS

Experiments by Dr. Robert B. Taft with radium detection devices, which have brought him national and even international recognition, recently have earned for him the silver medal of the American Roentgen Ray Society, an exclusive organization made up of about 475 of the foremost radium and X-ray experts in the United States and Canada. Dr. Taft is President of the South Carolina X-ray Society, and a former Vice President of the Radiological Society of North America.

Dr. R. C. Bruce, President of the South Carolina Medical Association, visited the Association Headquarters at Seneca, Wednesday, October 21.

Precautions to safeguard the health of students both on and off the campus are being taken at the University of South Carolina. The City Health Department of Columbia has agreed to inspect boarding houses near the University at which students are accustomed to take their meals. Those passing inspection will be placed on an approved list. Classrooms, dormitories,

rest rooms, and cafeterias on the campus will be inspected also. A faculty student health committee has been appointed to promote this work. Among the members of the faculty student committee are Dr. N. B. Heyward, University Physician, Chairman, and Dr. Isadore Schayer, Professor of Hygiene and Sanitation.

Miss Eleanor Bishop, daughter of Mr. and Mrs. Littleton Jackson Bishop, of 199 Grove Street, Montclair, was married October 9 to Dr. Thomas Martin Peery of Charleston, S. C., son of the Rev. Dr. John C. Peery of Newberry, S. C., and the late Mrs. Peery. The ceremony took place at 8:30 o'clock at St. John's Protestant Episcopal Church, Montclair, New Jersey. Dr. Peery is Assistant Pathologist at the Medical College of the State of South Carolina.

Dr. Edgar A. Hines, Secretary of the South Carolina Medical Association, delivered an address before the faculty and students of the Western North Carolina Teacher's College, Cullowhee, N. C., October 22, on Medicine as a Vocation.

# THE JOURNAL

OF THE

## South Carolina Medical Association

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NOVEMBER, 1936

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### DEATH OF DR. D. J. BARTON

The sudden passing of Dr. Barton, President of the Anderson County Medical Society, has caused wide spread sorrow over the Piedmont section of the State and elsewhere. Dr. Barton was a staunch and militant member of organized medicine. He served as Secretary of the Anderson County Medical Society for a number

of years and was rounding out his term as President of the Society at the time of his death. He was keenly interested in public health and in the progress of medicine and surgery. He was one of the organizers of the Piedmont Post Graduate Clinical Assembly which recently closed such a successful session in Anderson and he had plans in mind for the extension of the scope of the Assembly throughout the South Atlantic States. Dr. Barton was solidly behind the work of the State Medical Association and ready at all times to promote its best interests. He was a genial gentleman and enjoyed a wide circle of friendships both within and without the profession. He was a graduate in pharmacy, having practised this profession prior to his study of medicine. He was a graduate in medicine of the Medical Department of the University of Georgia. He was born at Townville in Anderson County and was 55 years old.

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### FOUNDERS DAY MEDICAL COLLEGE

The celebration of Founders Day at our State Medical School should continue to attract larger numbers of the profession each year for with experience the programs become more varied and attractive. It would be a fine gesture of appreciation if several hundred doctors should attend the clinics and the various other features of the program at the college in Charleston, November 5. Such an effort would greatly encourage the Board of Trustees and the faculty of the college in their commendable efforts to raise the standards of medical education in the South. The South Carolina Medical Association from its organization in 1848 has shown a keen interest in the affairs of the College. There has been a splendid reciprocal relationship existing between the two organizations. The Journal has benefited in large measure by the scientific contributions of the members of the faculty. It would be a very enjoyable occasion indeed if a large number of the old grads should attend the exercises along with the students of the college. Most of these young men come from our own state and are well known to the physicians in the various communities from which they come. A South Carolinian does not have to be urged very much to take a day off and



spend it in the delightful environment of the City by the Sea.

A glance over the program discloses its practical aspects for the busy doctor who may be able to leave his practice for a brief period. The special guest this year is Dr. Reginald Fitz who comes from one of the great medical centers of the world. Dr. Fitz is Professor of Medicine at Boston University, and a graduate

of Harvard. He was formerly House Officer at the Massachusetts General Hospital and has been Resident Physician at the Rockefeller Hospital, New York. He was at one time on the Staff of the Mayo Clinic. He was Associate Professor of Medicine at the Harvard Medical School and as a medical historian and clinician is well known throughout the country.

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## MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

### FOUNDERS DAY NOVEMBER 5, 1936

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#### PROGRAM

Founders Day celebration at the Medical College, which has in the past proved so successful, is expected to be an interesting occasion this year. The Medical College extends a cordial invitation to all physicians to attend the celebration.

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#### *Morning Clinics—Roper Hospital*

9:00 to 9:30—Fractures About the Elbow. By Dr. F. A. Hoshall, Charleston, S. C.

9:30 to 10:00—Results of Surgical Treatment in Tuberculosis. By Dr. W. A. Smith, Charleston, S. C.

10:00 to 10:30—Endometriosis. By Dr. A. J. Buist, Charleston, S. C.

10:30 to 11:00—Heart Disease of Nutritional Origin in Children. By Dr. J. I. Waring, Charleston, S. C.

11:00 to 11:30—Hypertrophic Arthritis. By Dr. George Wilkinson, Greenville, S. C.

11:30 to 12:00—Importance of the Time Factor in Peritonitis. By Dr. R. G. Dougherty, Columbia, S. C.

Luncheon—1:00 P.M. — Medical History Club, Fort Sumter Hotel.

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#### *Afternoon*

4:00 to 5:00—Medical Clinic. By Dr. Reginald Fitz, Boston.

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#### *Evening*

8:00—Banquet, Fort Sumter Hotel.

Founders Day Lecture: "From Cow Path To State Road: An Historical Ramble." By

Dr. Reginald Fitz, Professor of Medicine, Boston University.

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Dr. Fitz is prominent in medical circles and a member of the Council on Medical Education of the A. M. A. He will make a brief address at a luncheon sponsored by the Medical History Club of Charleston. Visiting physicians are invited.

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#### *X-Ray Apparatus on Display at the Medical College*

The William Henry Johnson memorial museum of X-ray apparatus has been instituted on the second floor of the Medical College building said to be the second X-ray museum in a medical college in the United States.

Containing apparatus dating back to the 1900s, only a few years after Roentgen discovered the ray in 1895, the museum was opened for inspection following a recent meeting of the Medical History club, an organization of local physicians.

Apparatus is shown that was used here by the late Dr. Johnson, Dr. Fleming McInnes and Dr. Robert Wilson. It covers the field to 1920.

Later the club hopes to add more apparatus, and also photographs and sketches of pioneers, both in Charleston and in the field generally. Dr. Hillyer Rudisill, Jr. was largely instrumental in collecting the apparatus for the club.

Dr. Wilson, Dean of the Medical College, read a sketch of Dr. Johnson at the meeting of the Historical Club. His son, Dr. Robert

Wilson, Jr. read a paper on Eighteenth Century Medicine.

#### *Increased Appropriation aids Medical College*

The increased appropriation for the Medical College secured largely through the efforts of the medical profession of the State has allowed the college to make some very necessary and desirable additions to its teaching staff. These additions have gone far toward reaching the suggested improvements in the college staff. It will be recalled that the committee of the A. M. A. which inspected the college last year, complimented highly certain personnel. With more money available many of the gaps have been filled and new members of the faculty are as follows:

B. D. Chinn, Ph.D. (University of Chicago) Instructor in Bacteriology.

Walter A. Stultz, Ph.D. (Yale) Instructor in Anatomy.

H. D. Bruner, M.D., (Louisville) Instructor in Physiology.

J. E. L. Rebeley, M.D. (Texas) Instructor in Clinical Pathology.

Stanley L. Levin, M.D. (Medical College of S. C.) Instructor in Medicine.

Harold Wood, M.D. (Tufts) Instructor in Pathology.

Leon Banov, M.D., well known for his public health activities and Health Officer of the City of Charleston, has been appointed Assistant Professor of Public Health.

It is hoped that as time goes on the college will increase its usefulness and standing by the addition of more instructors of the same capable type as the above mentioned.

## PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT No. 317 (31713)

April 17, 1936

*Case of Dr. Richards, Dr. Chamberlain, and Dr. Robert Wilson, Jr.*

Student Gregg (reading):

A negro man, 35 years old, admitted 9-7-35, discharged 10-4-35, readmitted 2-22-36, died 3-21-36.

History: Nocturnal attacks of dyspnoea with orthopnoea since about Jan. 1935. Unable to work since June, 1935, because of increasing dyspnoea on exertion. Swelling of the feet appeared about June, 1935, and has recurred at intervals. About Sept., 1935, the abdomen began to swell, and dyspnoea became more marked. Heart pain frequently. On digitalis therapy for some months. Cough since 1931, occasionally blood-streaked, no frank hemoptysis.

Past Illnesses: Measles, tonsillitis, influenza, rheumatism (1920). Malaria, lues (date?), neisserian infection (3 times).

Exam. in 1935: Near-normal temperature

curve, pulse varied from 50 to 110, B.P. 150/0. Apex in 6th interspace 6 inches from mid-line. systolic murmur over apex, diastolic murmur over aortic area. Precordial systolic thrill. Corrigan pulse, also pulsus alternans. Urine and blood normal. X-ray of chest (9-10-35): see chart. EKG (9-11-35) Left axis deviation, premature auricular contractions, notched QRS in II and III. Inverted T in II and III. Discharged as improved.

Exam. in 1936: Temp. 96.6, pulse 100, resp. 24, B.P. 140/40. A well developed man, orthopnoeic. Pupils equal and regular, reacting normally to light and in accommodation. Chest: Dullness in both bases, especially in right. "Expiratory sounds markedly increased and coarse rales on inspiration and expiration over both lung fields, especially over right." "Some widening" of mediastinum. Heart: apical impulse in 7th interspace in anterior axillary line. To-and-fro murmur over aortic area and transmitted downwards along left border of sternum. To-and-fro murmur at apex. "Very irregular in rate and rhythm, with numerous extra-sys-



toles. Pulse deficit present." Abdomen markedly distended, shifting dullness in flanks. No organs palpated. Pitting edema of feet and extending up onto thighs.

Lab.: Urine cloudy, insufficient for determination of S. G., alb. 1 plus, sugar, acetone and casts 0, 3 leukocytes per HPF, no RBC. Blood (2-24; 3-19): Hb. 55 per cent and 30 per cent (D); RBC -, -; WBC 5350, 8800; polys 79 per cent, and 78 per cent; lymphs 13 per cent and 16 per cent; monos 6 per cent and 4 per cent; achromia, etc., 2 plus. Blood Kolmer neg.; Blood Kline 4 plus. Blood Chemistry (3-9; 3-16): Urea N 41, 82; Creatinin 1.7, 3.6. Sputum (3 exams.): mucoid, leukocytes 3-4 plus, assorted bacteria 2-4 plus, no t.b. Abdominal Fluid (3-4; 3-16): Sp. Gr. 1.016 and 1.022; quantitative albumin 4 per cent and 3 per cent.

Course: Temp. subnormal for entire period of hospital stay, excepting for one rise to 100; about 97 for last 3-4 days. Pulse 60-90. Resp. 24-28. Little apparent change in clinical appearance of patient during hospital stay. Coupled premature ventricular contractions (or pulsus alternans?) appeared on 3-5-36 and continued until 3-9; digitalis discontinued on 3-5. 2000 cc. of clear straw-colored fluid removed from abdomen on 3-2-36, and 2000 cc. of similar fluid removed on 3-14-36. Edema did not disappear, remained orthopnoeic. Died on 3-21-36 at 1:55 A.M.

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Dr. Robert Wilson, Jr. (conducting): Mr. Baldwin, will you analyze this case for us?

Student Baldwin: This man has a history of a chancre, although the duration of his infection is not known. The Kline test is four plus. There is a loud diastolic murmur at the aortic area, as well as a to-and-fro murmur at the apex. The blood pressure is 150/0 on one occasion and 140/40 on another. The pulse is of the Corrigan type. This is a fairly complete picture of aortic insufficiency of luetic origin. The high specific gravity of the abdominal fluid is somewhat hard to explain, but I believe that fluid is a transudate. The to-and-fro murmurs are probably a result of a dilatation of the heart. These factors, coupled with the edema and the pulsus alternans, indicate that myocardial failure has set in.

Dr. Wilson: Mr. Baldwin, in September 1935 there was a systolic murmur at the apex and a diastolic murmur at the aortic area, while in February 1936 there were to-and-fro murmurs at both the aortic area and at the apex of the heart. How can you explain this difference in the two examinations?

Student Baldwin: I can't explain it.

Dr. Wilson: Well, what is a possible explanation of a systolic murmur over the base of the heart? When can such a murmur be due to syphilitic disease?

Student Baldwin: Syphilitic aortitis commonly gives such a murmur.

Dr. Wilson: Mr. Brantley, do you agree with the diagnosis?

Student Brantley: Yes, I agree with the diagnosis of aortic insufficiency due to syphilis. But I believe that there must have been an infection somewhere to bring the hemoglobin down to such a low level. There is nothing in the record to explain it.

There was probably a dilatation of the right side of the heart to cause death. I believe that the systolic murmur at the apex was due to dilatation of the mitral ring, and that the diastolic murmur at the apex was an Austin Flint murmur, due to a functional mitral stenosis caused by regurgitation of the blood from the aortic valve over the aortic cusp of the mitral valve during diastole.

Dr. Wilson: How do you explain the cough and blood streaked sputum?

Student Brantley: I can't explain that well. I don't believe that they could have been due to heart failure and have lasted as long as five years. We cannot rule out tuberculosis of the lungs, but there is nothing else in the record to suggest tuberculosis. There was no material abnormality of the temperature curve. Tubercle bacilli could not be found in the sputum. The abdominal fluid appears to have been a transudate rather than an exudate.

Dr. Wilson: Mr. Hall, how do you explain nocturnal dyspnoea and orthopnoea?

Student Hall: This counts like cardiac asthma, and suggests disease of the aorta, probably aortic insufficiency.

Dr. Wilson: Yes, cardiac asthma occurs in aortic insufficiency, but is probably even more common in hypertensive heart disease.

Does the electrocardiogram help any?

Student Hall: The left axis deviation suggests hypertrophy of the left side of the heart. The notching of the QRS complex and the inverted T-waves may represent digitalis effect.

Dr. Wilson: You say that the QRS complex is notched; if it were also widened, what would that mean?

Student Hall: Delayed intraventricular conduction time.

Dr. Wilson: In this case we have extrasystoles; if auricular fibrillation had been noted, how would that affect the diagnosis?

Student Hall: Auricular fibrillation is very uncommon in simple aortic insufficiency of syphilitic origin.

Dr. Wilson: Mr. Pernwerth, how do you explain the precordial thrill?

Student Pernwerth: I believe that whatever produced the loud systolic murmur also produced the thrill. If the murmur was due to dilatation of the mitral ring, the same might have caused the thrill: almost any loud murmur may give a thrill.

Dr. Wilson: Let's see the x-ray. (Viewing x-ray film) Mr. Bernstein, does this film substantiate or disprove the diagnosis?

Student Bernstein: It does not disprove the diagnosis, but the marked enlargement of the heart shadow, both to the right and the left, certainly suggests pericardial effusion.

Dr. Wilson: Dr. Rudisill's report brings out enlargement of both sides of the heart, and prominence of the left upper border suggested to him that the case was probably one of rheumatic disease of the mitral valve. This film, taken in September 1935, did not suggest pericardial effusion to Dr. Rudisill.

Mr. Bernstein, how do you interpret the coupled beats of the heart?

Student Bernstein: They were probably due to digitalis overdose.

Dr. Wilson: Will some member of the staff discuss the case?

Dr. Robert Wilson, Sr.: The x-ray picture suggests that there is disease of the mitral valve. Accepting this, we then have two possibilities: syphilitic disease of the aortic valve, with the exceedingly rare syphilitic disease of the mitral valve associated, or concurrent involvement of the mitral and aortic valves by rheumatic in-

fection. This latter is much more common.

Student Pernwerth: Is nocturnal dyspnoea due to syphilitic aortitis or to aortic insufficiency?

Dr. Wilson, Jr.: In spite of the fact that most textbooks on medicine state that nocturnal dyspnoea is a conspicuous symptom in syphilitic aortitis, I do not believe that uncomplicated syphilitic aortitis causes symptoms. When the mouths of the coronary arteries are so narrowed that the nutrition of the myocardium is impaired, or when the aortitis extends down onto the aortic valves, or when aneurysm develops, symptoms will become apparent, but without one or more of these complications I believe that the aortitis is symptomless. Nocturnal dyspnoea develops under circumstances causing failure of the left ventricle, and hence occurs conspicuously in hypertensive heart disease and in aortic insufficiency. Rheumatic disease of the mitral valve seldom causes nocturnal dyspnoea.

Dr. Lynch: Nocturnal dyspnoea must not be due to pulmonary congestion if Dr. Wilson's statement about its rare occurrence in mitral stenosis is true. Pulmonary congestion is probably more marked in mitral stenosis than in any other disease. There is an increased carbon dioxide tension in the blood in mild states of left ventricular failure, and possibly variations in the susceptibility of the respiratory center to the increased carbon dioxide tension of the blood occur during sleep, causing the nocturnal attacks.

As you can see in the mounted specimen (demonstrating autopsy specimen), both the right and the left ventricles are hypertrophied and dilated. The endocardium, especially in the left atrium, is greatly thickened. The myocardium of the left ventricle shows numerous fibrous scars grossly. The aortic valve leaflets are shortened, thickened and puckered, as may be seen in either syphilitic or rheumatic valvulitis. But the aorta itself is quite normal, and this would be very unusual if not impossible if the valvulitis were syphilitic in origin. The mitral valve is somewhat thickened, and the chordae tendineae are shortened and thickened. I believe that there must have been a general stiffness of the whole mitral sys-



tem, possibly with an early or minor grade of mitral stenosis.

Looking backward now on this case (and it is always easier to look back and see these things than it is to look ahead to the diagnosis), I believe that this record can be explained better on the basis of rheumatic heart disease. The x-ray picture, besides showing evidence of disease of the mitral valve, seems to me to be very suspicious of a pericardial effusion (an organizing pericarditis was present at autopsy). This is very commonly seen during the course of rheumatic heart disease, and probably occurs at some time in almost every case.

The presence of cough and occasional blood-streaked sputum in a case of heart disease without active organic disease of the lungs should always cause one to suspect mitral stenosis, since pulmonary congestion is so much more conspicuous in failure of the left atrium (from mitral stenosis) than in other forms of heart failure.

The electrocardiogram showed evidence of severe myocardial damage; this would be much more common in rheumatic pancarditis than in syphilitic heart disease, although it could occur in the latter.

And finally, as Dr. Wilson has already pointed out, if the x-ray picture is taken as definite proof of disease of the mitral valve, the chances are very great that rheumatism and not syphilis has caused this disease of the mitral valve. Syphilitic disease of the aortic cusp of the mitral valve is recorded in the literature, but in our wide experience with syphilitic heart disease here I have never seen such a case. I almost wonder if it actually exists.

The anemia could not be explained at autopsy. But it is not uncommon that such a thing cannot be explained by autopsy. We see in the morgue only the end-stages of disease, and this end-stage may be quite different from the earlier stages.

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## INTERNAL MEDICINE

J. H. CANNON, M. D., CHARLESTON, S. C.

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### WHAT'S IN A NAME?

*By Geo. R. Wilkinson, M.D., Greenville, S. C.*

A great deal of meaning may be conveyed in a name. For instance, Benedict Arnold is the appellation of an individual long since dead, and still the mention of his name brings to the mind of even a child in the grade school a picture of horror. The portrait of the traitor is so rarely shown that it would hardly be recognized. The names Benedict and Arnold are not uncommon, but what fond parent would christen a child Benedict Arnold.

In medical nomenclature, when it is possible, a disease is so designated that the name itself will convey an idea as to where in the body the disease exists and what the causative factor is. When it is practicable, the term is limited further in order that the disease may be more easily classified in the catalogue of ailments.

Hypothyroidism is an example of a name that locates the part affected and indicates how its function is impaired.

There is the term "arthritis" which is displacing rheumatism. The word is coming into use and directs the attention to a single feature of the disease. Yet the more one learns about the disease, the more convincing it becomes that the disease affects the body as a whole and is truly a systemic disease. Why not stick to the old name—"rheumatism"—that everybody knows? The word brings to mind a picture that means too much to let it pass into obscurity or disrepute. Rheumatism, if you divide the word, does not refer to any one part; it does not classify or further define the disease; it does not direct the attention falsely. The name represents a definite disease familiar to the medical profession and the laity.

## SURGERY

WM. H. PRIOLEAU, M.D., F.A.C.S., CHARLESTON, S. C.

### "WOUNDS OF THE HEART"

The heart is fast yielding to surgical treatment. The problems connected with it are being attacked by a number of capable workers. The August, 1936, issue of the Journal of Thoracic Surgery is practically devoted to this subject. The article of most practical interest is that concerning stab wounds of the heart.

Dr. Daniel C. Elkin, of Atlanta, gives a brief resume of the history of the treatment of wounds of the heart and reports in detail thirteen cases treated by him. The history is usually that of profuse bleeding from the external wound, during which period the patient feels no evidence of injury—often continuing to fight or running several blocks. Following this there is exhaustion and collapse, frequently with unconsciousness. At this time there is generally cessation of the external bleeding. This chain of symptoms is due to a gradually developing tamponade which seriously interferes with the heart action and results in cerebral anoxemia. This condition prevailed in all of the cases reported. Fluoroscopic examination is of great diagnostic value, as the accumulation of blood prevents the normal pulsations of the heart. If necessary, aspiration may be

resorted to for diagnosis or to temporarily decompress the heart in extremis. After diagnosis has been made, immediate operation should be carried out. Nitrous oxide oxygen anesthesia is preferable, as pleural injury is frequent, which necessitates that the anesthesia be given under pressure. The author finds the most satisfactory exposure obtained by reflecting laterally a flap of skin and muscle and excising two costal cartilages. The difficulty is in locating and suturing the wound in the heart. This is facilitated by removing the blood from the pericardial sac and occluding the opening in the heart with the left index finger. The suture is passed well into the muscle, but should not enter the heart chamber. The first suture provides traction as well as partial hemostasis. After control of the bleeding the pericardium is gently cleansed and the anterior opening closed. Drainage may be provided by an opening through the pericardium into the pleural cavity, but never externally. Once the patient has survived the operation, the most important factor in the prognosis is infection. In the thirteen cases reported six patients died: one did not survive the operation; two of pneumonia; one of pericarditis; one of mediastinal emphysema; and one of septicemia.

## NEWS ITEMS

Dr. W. A. Sheldon, 69, prominent Pickens County physician, died at his home, Liberty, S. C., October 24. He had practiced medicine for forty three years. He was a member of the Pickens County Medical Society, the South Carolina Medical Association, an officer of the Southern Railway Surgeons' Association, and an elder in the Presbyterian Church.

Dr. Sheldon is survived by his wife, Mrs. Hattie Norris Sheldon; two sons, W. G. Sheldon, Apopka, Fla. and E. E. Sheldon, Miami, Fla.; five sisters and one brother. Funeral services were held at the Presbyterian Church,

October 26. Members of the Pickens County Medical Society with Dr. E. J. Bryson, Dr. J. C. Hunter, and J. E. Kessler served as Honorary pallbearers. Active pallbearers were Drs. N. C. Brackett, J. H. Hutchins, L. R. Poole, J. W. Potts, P. E. Swords, and Robert Jeanes.

Drs. W. C. Hearin and John F. Simmons of Greenville conducted the Maternity and Child Welfare Clinics at the Lonsdale Mill, Seneca, S. C., October 23. These clinics were held under the auspices of the State Board of Health.



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### NATIONAL NEWS LETTERS

Mrs. J. P. Simonds, Chairman of Press and Publicity of the Woman's Auxiliary to the American Medical Association, stated in a recent letter to me that the Association was very anxious for each County Auxiliary to receive the News Letters. These are published four times a year, October, January, March, and May. The price for the four issues is \$1.00. The News Letters will be the best way in the world for us to keep up with what is going on in this large organization of ours, and I do hope that if each member of the South Carolina Auxiliary cannot subscribe to the Letters, each County Auxiliary can do so. Please send your subscriptions to Mrs. Lucius Cole, 1117 North Lathrop Ave., River Forest, Ill., as she is Chairman of Printing and Supplies.

Mrs. I. Jenkins Mikell, Chairman  
Press & Publicity.

### THE PICKENS COUNTY AUXILIARY

The Pickens County Medical Auxiliary sponsored an address, October 16, 1936, at the High School Auditorium, Dr. J. Warren White of the Shrine Hospital for Crippled Children

in Greenville, S. C., being the speaker. He was introduced by the Auxiliary President, Mrs. J. L. Bolt.

Dr. White spoke to the Student Body of the Easley High School and to visitors on "Posture." His address was very interesting and instructive. Diagrams of correct and poor posture were also shown.

Mrs. W. B. Furman,  
Publicity Chairman.

### RIDGE MEDICAL AUXILIARY

The Ridge Medical Auxiliary met with Mrs. David Garvin at Ridge Springs in her attractive home on Main Street, October 19, 1936. The meeting was called to order by the president, Mrs. Garvin. After prayer the business program was carried out.

A very interesting paper was read by Mrs. T. G. Asbill on the Indian Medicine Man. A number of plants that the Indians used as medicine were mentioned. Mrs. W. P. Timmerman exhibited a specimen of *Ilex Vamitara*. A number of Indian relics were arranged on a table, such as a large piece of birch bark, a pottery vase, a peace pipe, a cook pot made by the Indians, a bead bag made by an Indian girl named Mildred Crow, a pair of tiny moccasins, a battle axe, a large spear, a small arrow head were displayed by Mrs. T. G. Asbill; Mrs. W. P. Timmerman showed a big collection of arrow heads, mortar and pestle, and a tomahawk; Mrs. E. C. Ridgell displayed several tomahawks, arrow heads, a pestle, a large Indian spoon that was given her grandmother, Mrs. Julius Banks, many years ago by a half Indian woman named Millie. Mrs. W. P. Timmerman told a beautiful Indian legend; she also showed a scrapbook containing a number of pressed medicinal plants.

The Auxiliary was well attended by members and several visitors; one new name was added to the roll. At roll call the members answered with the names of the Indian Tribes.

At the close of the meeting the doctors of the Ridge Medical Association as well as the

Auxiliary members were entertained at a delicious salad supper by Dr. and Mrs. Garvin. Every one left feeling that Dr. and Mrs. Garvin were charming host and hostess.

Cleo A. Ridgell,  
Publicity Chairman.

The 29th Convention of the South Carolina State Nurses' Association was held in Florence, October 29-31. Dr. C. Fred Williams, Superintendent of the South Carolina State Hospital, and Dr. W. R. Mead, of the McLeod Infirmary of Florence, appeared on the program. Miss Laura Blackman, of the State Board of Health, was elected President.

Dr. Frank L. Geiger, Director of the Oconee County Health Department, has been transferred to Colleton County. Dr. W. B. Furman, Director of the Pickens County Health Department, will also have oversight of the Oconee County Health Department for the present. Dr. Furman attended the American Public Health Association which met in New Orleans, October 20-23.

Dr. T. L. W. Wellbrock, formerly of Charleston and Assistant in the Division of Surgical Pathology in the Mayo Clinic, is enjoying an extensive European clinical trip, visiting London, Hamburg, Berlin, Prague, Munich, Zurich, Freiburg, Vienna, Budapest, and Paris. Dr. Wellbrock is a frequent contributor to the Journal.

Dr. P. M. Workman of York visited his friend Dr. Harry Ross, Seneca, S. C. recently.

Dr. David Lyle, 57, York County senatorial nominee, died at 10:30 P.M., October 25, Rock Hill, S. C. His death was attributed to angina pectoris. Dr. Lyle has long been a political

figure in the county. He has been a member of the General Assembly and has also served the City of Rock Hill as Mayor.

Dr. Lyle is survived by his widow; two sons, David and Nash, two daughters, Misses Jean and Henriette Lyle; two brothers and two sisters. Funeral services were held in the A. R. P. Church, Tuesday morning, October 27, and interment followed at Edgemoor, in Chester County. Dr. Lyle was a native of Chester.

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THE SANATORIUM is a private institution with 150 beds, located in the Ginter park suburb on the Richmond-Washington National Automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

THE PLANT consists of fourteen separate buildings, most of which are new, located in the midst of a beautifully shaded 50-acre lawn, surrounded by a 120-acre tract of land. Remoteness from any neighbor assures absolute quietness.

THE LARGE number of detached buildings makes easy, satisfactory and congenial groupings of patients. Separate buildings are provided for men and women. Rooms may be had single or *en suite* with or without private bath. A few cottages are designed for individual patients.

THE BUILDINGS are lighted by electricity, heated by hot water, and are well equipped with baths.

THE SCOPE of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Five physicians reside at the sanatorium and devote their entire attention to the patients. A chartered training school for nurses is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

SYSTEMATIZED out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

THE SANATORIUM maintains its own truck farm, dairy, and poultry yards.

*Illustrated Booklet on Request*

# THE JOURNAL

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## South Carolina Medical Association

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### PULMONARY ACTINOMYCOSIS

By

H. Y. HARPER, M.D.,

Anderson, S. C.

Pulmonary Actinomycosis is a rare disease but occurs often enough in any large clinical medical service to force clinicians to be on the alert for its presence. Its incidence is about .053 or one case out of every 1883 cases, medical and surgical.

It is a fungus infection, the etiological agent being one of several strains of Actinomycosis. Eight strains have been described as pathogenic in man. The Actinomycosis bovis is the strain most frequently mentioned as being the etiological agent. This is a non-motile, non-spore-bearing, gram negative anaerobe. It appears as the center of tangled threads surrounded by a zone of clubbed ends. Shaw and Bigger report a case of Actinomycosis with recovery due to Actinomycosis Necrophorus. Baer and Klemmer report a fatal case that was due to Actinomycosis Graminis, an aerobic fungus. This organism had previously been considered a saprophyte.

Sanford in 1925 collected 680 cases of Actinomycosis. Langenbeck in 1845 reported the first case. It was recognized by sulphur granules found in pus from vertebral caries. The first case of Pulmonary Actinomycosis was reported in this country by Hodenpyl in 1890.

Organisms are found on vegetation, especially on corn stalks. In experimental work, seeds have been inoculated and the fungi have appeared on the stalks. They are also found in dust, pollen or chaff from grains. Infection

occurs by ingestion of infected material, aspiration of infected dust, chaff, pollen or foreign bodies or by inoculation from wounds made by infected material such as barley beards or grain stalks. The organism has frequently been demonstrated in the digestive tract of man, and is doubtless due to the prevalent habit of chewing grain stalks, straw, or blades of grass. Aspiration as a means of infection has been proved by finding an aspirated foreign body as a bit of carious tooth or barley beard in the lungs, surrounded by the organisms. Workers in grain fields, tobacco factories and distilleries or about threshing machines are often victims of Actinomycosis. Many cases have been reported in which infections of the mouth, throat, tongue or neck have directly followed wounds by grain stalks or barley beards. It is uncertain whether or not the organisms are able to pass through intact mucous membrane, but it is a well established fact that the disease may be caused by the inoculation of materials, frequently known to carry the fungi, into the mucous membrane. Men who are associated with affected cattle have been known to acquire the disease but there has never yet been reported any authentic instance in which man was known to have been infected directly from cattle or from other men. It is also well known that healthy cattle may be closely associated with infected ones without acquiring the disease. Therefore, it is thought that in all probability man and animals are infected from a common source such as the resting stage of the organism or vegetation. Certain investigators believe the fungus is often harbored in a dental cavity or a pyorrhea pocket where it is a constant source of danger.

Actinomycosis usually occurs about the face and neck in the form of a chronic discharging



sinus. The lungs are frequently involved. A sinus may appear in the chest wall and it is from these sinuses and from the sputum of infected individuals that the sulphur granules are collected. The fungi may be demonstrated in the sulphur granules. It is sometimes very difficult to demonstrate the sulphur granules. Granules are more likely to be present where there is considerable development of connective tissue and where the progress of the disease is slow with manifest resistance on the part of the tissue, while in the relatively rapidly progressive cases or those in which there is little evidence of resistance on the part of the tissues to the infection, clubs may be wanting on the granules. The frequency with which the lungs are involved in comparison with other parts of the body is shown by the fact that only fourteen percent of the cases of Actinomycosis are of thoracic origin. Eighteen percent of the cases occur primarily in the abdomen and sixty percent in the cervico-facial region. Actinomycosis is often primary in the lungs as demonstrated by numerous case reports.

Torek believes that in his cases the primary infection was in the lungs and that the cervical region was secondarily involved. Numerous case reports in which the cervico-facial region was free of involvement lead us to believe that this disease quite often occurs as a primary pulmonary involvement.

Symptoms of the disease are cough, expectoration, blood-streaked sputum, hemoptysis, loss of weight, loss of strength, fever of an irregular type, and pleural pain. Frederick T. Lloyd lists pleural pain as an early typical sign. Later in the course of the disease sinus formation is noted in the chest. The picture may be that of a severe bronchitis with an area of bronchopneumonia. There may be consolidation of one or more lobes. Abscess or gangrene are frequent end results. The most characteristic thing about the pathology of the lesion is the formation of a large amount of granulation tissue and later connective tissue and spread of the disease process without respect for the surrounding tissue. When the disease spreads to the pleura, the visceral and parietal pleura are sealed together and a sinus is formed through the chest wall without formation of empyema.

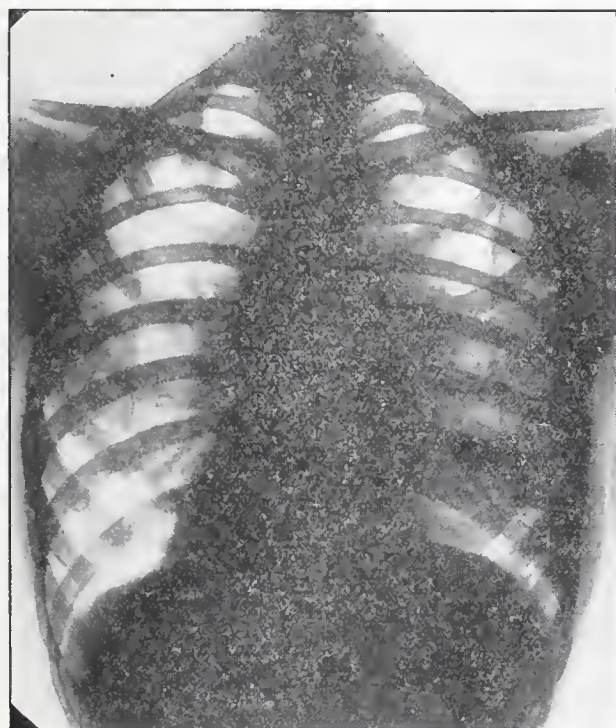
The same is true if the diaphragm is invaded. The bones are often invaded. In several cases reported the ribs, sternum, and clavicle were entirely destroyed. In Walsh's case the humerus was also invaded. Kirklin states "there is only one roentgen sign which when present might help materially to establish a diagnosis of Actinomycosis;—that is involvement of the ribs or sternum. This may be shown by areas of destruction with or without reaction of osteomyelitis around it or periostitis. Without these changes in the ribs, purely roentgenologic differential diagnosis from chronic abscess of the lung with or without empyema, from chronic tuberculosis, or from empyema with thickened pleura seems impossible."

Pulmonary Actinomycosis is usually fatal. It is characterized by a long, progressively downward course from three months to fifteen years. At autopsy the lungs of these patients show extreme fibrosis, multiple abscesses with sinus formation or consolidation. The parietal and visceral pleura are usually sealed together by adhesions.

Treatment of Pulmonary Actinomycosis has long been Potassium Iodide orally in increasing amounts to the point of tolerance. Very little has been added to this in recent years and this is still effective in some cases, although one writer reports that he grew the organism in a culture containing two percent potassium iodide. Preston of England reports having found administration of Lipiodol intratracheally and intramuscularly together with tincture of Iodine and Potassium Iodide orally to be of value in a limited number of cases. Wangenstein and others who have had considerable experience in chest surgery suggest excision of the diseased tissue even if this requires lobectomy or pneumonectomy. Curettage of sinuses with cauterization is sometimes helpful. It seems that the most benefit has been obtained in those cases where surgery was applicable. X-ray therapy is recommended for treatment of Pulmonary Actinomycosis in the *Year-Book of Radiology* of 1935. In spite of these methods, however, Pulmonary Actinomycosis still claims a fearful mortality and can be helped very little unless it is treated intensively in the early course of the disease.

*Case Report:* R. M., age 36, white, male,

farmer. Chief complaint: Pain in chest. Present illness: Four months previous to admission patient developed pleuritic pain in the right anterior axillary line. The pain was acute but was not accompanied by cough or expectoration. He had a temperature of 99. This persisted for about ten days, at which time the pain was noted in the right interscapula region. It was still lancinating in character and exaggerated by deep respiration. He began to cough a little at this time and noted slight expectoration. He had night sweats and



progressive loss of strength. These symptoms had persisted to the time of admission. His past health had always been good. Has had an occasional respiratory infection and the usual diseases of childhood. Family history negative for tuberculosis and neoplastic diseases. No knowledge of contact with tuberculous patients.

*Physical Examination:* Temperature 100, pulse 90, respiration 22, blood pressure 100/70. Patient was a well developed, undernourished white male of about 36. Teeth were dirty and carious. Gums were spongy and retracted. He showed evidence of recent loss of weight. His neck showed no glandular enlargement. Examination of the chest showed that in the right inter-scapula region there was an area of

swelling and discoloration about six centimeters in diameter. There was no fluctuation and only a slight feeling of tenderness. Expansion was slightly limited on the right side but otherwise symmetrical. Tactile fremitus was increased over both hilus regions and over the right base, anteriorly and posteriorly. Breath sounds were broncho-vesicular in character over the right base. The spoken voice was slightly increased. His heart was normal in size, and there were no murmurs. His abdomen showed nothing remarkable. Red blood count was 3,800,000, hemoglobin 78 percent. White blood count was 12,000, 72 per cent polys, 28 percent lymphocytes. Wassermann was negative. His urine was negative. On October 7, 1936, the indurated area in the right scapular region was incised. There was a clear, straw colored discharge containing sulphur granules.

*Pathologist's Report:* A sinus existed at seventh interspace, right, interscapular region. The sinus showed longitudinal stiration with peripheral induration. Was red and somewhat indurated. Typical "sulphur granules" were expressed and these were crushed beneath a cover glass and examined microscopically. Typical club bearing Actinomycosis was demonstrated.

The patient was put on Potassium Iodide in increasing amounts to point of tolerance. When last heard from, three weeks after treatment was begun, no progress in his condition had been noted.

*Summary:* (1) Pulmonary Actinomycosis is a rare disease, characterized by cough, expectoration, pleuritic pain, loss of weight and strength, hemoptysis, fever and eventual sinus formation in the chest wall. Chronicity is characteristic. Diagnosis is extremely difficult, having been made at autopsy in most of the cases reported. Diagnosis can only be made by demonstration of the "sulphur granules" from a sinus or the sputum or by demonstration of branching mycelia in the sputum of an individual with the above mentioned clinical picture.

X-ray plate of patient with Pulmonary Actinomycosis mentioned above.

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## SURFACE ANAESTHESIA OF THE TRAUMATIZED URETHRA\*

By

ERNEST L. BRODIE, M.D.

Buffalo, N. Y.

and

I. A. PHIFER, M.D.

Spartanburg, S. C.

Traumas of the urethra are frequently seen on an active urologic service. Such are occasioned by ineffectual and traumatic instrumentation of urethral strictures and obstructive prostatic lesions.

\*From the Urologic Service of the Buffalo City Hospital.

Trauma of the urethra demands immediate care. The circumstances invariably make the use of an anesthetic agent, which may be injected into the urethra, desirable. Unfortunately, this entails considerable risk to the patient, because of the previous trauma. Reactions to procaine solutions under such conditions are so common that we never permit its use. In fact, we have seen reactions in people who were not sensitive to the drug, in whom the drug had been forcibly injected into the urethra, as evidenced by the appearance of blood in the solution when the penis clamp was removed. The dangers of the use of procaine in the traumatized posterior urethra and cautions against its indiscriminate use, have been stressed by Bingham(1).

In surveying the field of suitable drugs, because of its comparatively low toxicity, freedom from reactions and prolonged effective anesthesia, diothane seemed desirable to investigate.

This compound was developed by Rider(2) from phenyl urethane. It is a dull, white, fluffy, crystalline substance. The crystals dissolve slowly in water to give a saturated solution which at room temperature has a concentration of 1.03 per cent. Solutions of 1 per cent and 0.5 per cent have a PH value between 5.1 and 5.6. Such solutions are perfectly stable for indefinite periods when prepared and stored in non-alkaline containers. Alkalies precipitate the anesthetic free base, so that minute traces of alkali present in a solution will, in the course of time, lead to a deposition of crystals.

Its prolonged effect may be explained on the basis that diothane has a definite affinity for protein substances. That this process is reversible is evidenced by the fact that precipitated albumin may be re-dissolved by dialysis. In addition, diothane has some bacteriostatic properties, but this action against bacteria is not sufficient to render the solution "self-sterilizing."

This product has been used experimentally in many of the special fields of medicine. McKim and his co-workers(7) have shown that its chief advantage over the commoner local anesthetics is its low toxicity. They state it is much less toxic than cocain, butyn, novocain, and nupercain. With the exception of nupercain,

the duration of the anesthesia of the cornea of the rabbit is greater with diothane than with the other anesthetics mentioned.

The drug has been proven to be a practical anesthetic in ophthalmology by Krause(3) in 1 per cent aqueous solutions. The applicability of diothane in otolaryngology has been investigated by Stitt(4), who concludes that the preparation is a satisfactory local anesthetic and may be used to replace cocain for all routine uses. In proctologic surgery, Rosser(5) has used Diothane with satisfactory results.

Bandler(6) has used this preparation in a variety of urologic cases. He used 0.5 per cent aqueous solution and found it adequate for anesthesia in all cases except at the meatus, where one per cent solutions were preferable. Ten minutes was allowed to elapse before any instrumentation was attempted. In his group of over three hundred patients no evidence of toxicity was encountered.

McKim, Smith, Rush and Rider(7) reported a series of one hundred and sixty-four cases of instrumentation of the urethra: these included urethroscopic and cystoscopic examinations and treatments, urethral dilatations and internal urethrotomies. With no exception there was a complete absence of any pre- or post-anesthetic discomfort found in some of the other local anesthetics. The best concentration appeared to be about 0.5 per cent. Five to ten minutes was found to be usually sufficient for development of anesthesia.

Our experience with Diothane has been limited chiefly to the traumatized urethra. The procedure was as follows: patients who had recently been traumatized instrumentally, were injected with 30 cc. of the drug to adequately distend the urethra. If the urine was markedly alkaline and conditions permitted, the urethra was first irrigated with 1:1000 solution of acetic acid. This step definitely enhanced the degree of the anesthesia in these infected cases. The drug was retained in the urethra for twenty minutes before any manipulative measure was carried out.

The above technique was used in thirty-two males. The age of the patients varied from 23 years to 91 years. Of these, twenty-six had urethral strictures, in three there was an

adenomatous hyperplasia of the prostate, two had chronic pyelonephritis and one had a fibrosis of the vesical neck, and of the operative procedures employed; twenty eight represented some form of dilatation, three were cystoscopies and one had a Robinson catheter passed on a stylet.

In as much as time elapsed since the last manipulative procedure necessarily enters into estimation of the safety factors involved, we herewith present the time interval since the last previous instrumentation.

	<i>No. of Cases</i>
Less than twenty-four hours -----	1
2 days -----	11
3 days -----	3
4 days -----	1
5 days -----	3
6 days -----	1
7 days -----	6
8 days -----	1
11 days -----	1
12 days -----	1
14 days -----	2
21 days -----	1

In one of the stricture cases there was definite evidence of extravasation of the Diothane into the periurethral tissues.

No untoward reactions were experienced. The degree of anaesthesia obtained was satisfactory. Further, all the patients stated that the usual post-instrumental discomfort was greatly minimized.

In view of the apparent safeness of the drug, the next step was the injection of 15 cc. of Diothane into the urethra of 50 patients with urethral stricture immediately following their dilatation. No reactions or untoward phenomena of any kind were encountered.

#### CONCLUSION

Diothane in aqueous 1 per cent solutions has proved to be an adequate and apparently safe anesthetic agent in a traumatized urethra.

Further, it minimizes the usual post-instrumental discomfort. When feasible, in the presence of alkaline urine, urethral irrigation with 1:1000 acetic acid preceding the use of the drug enhances the degree of anesthesia.



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## TOXIC NODULAR GOITRES

By

ROGER G. DOUGHTY, M.D.,  
Columbia, S. C.

Empiricism has played a leading role in the treatment of goitre from ancient times to the present. Iodine in the form of seaweed poultices was used by the ancient Chinese and the South American Indians chewed the Palo-cota or goitre stick—a piece of seaweed. The development of the use of iodine in goitre, however, was extremely slow, and it remained in the dim background until very recent years.

On the surgical side, the development has also been very largely empirical. Adbul Khalaf Eben Abbas, or Albucasis, probably performed the first extirpation of a goitre in Bagdad in the latter part of the 10th century. Surgery had to await the development of haemostasis, anesthesia and aseptic technique, however, before

much progress could be made even in goitrous areas.

In very recent years the beginnings of a foundation have been laid for the basic understanding of the disease process and therefore for its rational treatment. While in the aggregate the work done thus far seems tremendous, we are still a very long way from a complete understanding of the problem.

DeLingeris, in 1906, in Kocher's clinic, showed that a compensatory hypertrophy of the thyroid in dogs could be converted into a colloid, or resting phase, by the administration of iodine. Marine and his co-workers carried this a step further in their brilliant work and Neisser, in 1920, applied the accumulated knowledge, giving iodine to a few exophthalmic patients. He noted a marked improvement.

It remained for Plummer, however, in 1923, to treat a long series of cases with Lugol's Solution and to thereby thoroughly establish the clinical use of iodine in hyperthyroidism. It should not be forgotten, however, that its use in adolescent hypertrophy considerably preceded Plummer's observations.

On the pathological side there is a good deal of confusion. The various classifications of thyroid abnormalities were almost as numerous as the individuals studying them until Aschoff's classification was universally adopted in Europe. This action served to clear the atmosphere considerably and left in the main two schools of thought. They are opposed to each other primarily in the theory of the origin and meaning of the nodular toxic goitres, a type very common in central South Carolina. Aschoff regarded these as true new growths of a benign type, capable of secreting toxic products approximating the normal thyroid secretion and there is much to sustain his view. He named one type of this group "foetal adenoma," signifying his belief that it originated from rests of foetal cells in the thyroid gland. There are several objections to Aschoff's views, on the clinical side, especially, as relates to the behavior of these glands upon administration of iodine.

The opposing school has developed a theory which is very pretty in its application and which in the main has withstood the test of time quite well. It is based upon the changes observed in hypertrophic and hyperplastic thy-

roids upon the administration of iodine. The idea was born, of course, when DeLingneris recorded his observations in 1906 and it was developed by Marine and his co-workers and finally by Reinhoff.

The thyroid is known to undergo hypertrophy in response to normal physiological demand at various times in the life of each individual. This hypertrophy is often striking at puberty, during gestation, lactation and menstruation. In addition, hypertrophy and hyperplasia occur during many serious illnesses and in response to other demands of a more or less physiological type. Marine's work led him to the conclusion that "Goitre is a compensatory, or work hypertrophy of the thyroid gland, depending upon a relative, or absolute, deficiency of iodine." Reinhoff found involutional changes following physiological hypertrophy and hyperplasia "of the new born, after puberty and after pregnancy and lactation." "These involutional changes are, within certain minor variations similar, in all respects, to those of hyperthyroidism."

The hypertrophic and hyperplastic gland contains acini markedly irregular in size and shape and with a greatly diminished colloid content. The involution of such an area results in large acini with a greatly increased colloid content. The former state is the actively secreting one, the latter the "resting" phase, or state of diminished secretion. It has been conclusively shown, I believe, that the administration of iodine is capable of bringing about this change from the over-active to the resting stage.

The hypertrophy and hyperplasia of the thyroid may occur diffusely throughout the gland or it may be confined to one lobe or a part of one lobe. Similarly, the involutional change may be spotted, leaving areas of hypertrophy and hyperplasia unchanged. When this occurs it inevitably results in a nodular change in the gland and it explains why spontaneous remissions as well as the administration of iodine fail to bring the basal metabolic rate down to normal but rather leave the patient simply in a milder hyperthyroid state than before. The hypertrophic and hyperplastic changes may then, and almost always do, recur. It is, unfortunately, an observed clinical fact that after an artificial remission has been produced by iodination, and been followed by a

recurrence of hypertrophy and hyperplasia, the recrudescence either fails to respond to iodine a second time or responds but feebly.

There is in my care now a patient illustrating particularly well the development of a toxic nodular goitre as outlined above. She is a middle aged woman who, twenty years ago, had an episode of nervousness, weakness, and emotional instability coincident with the development of a mass in the thyroid. This was followed by a spontaneous remission lasting fifteen years but during this time she thinks she was, nevertheless, a little more nervous than before her first trouble.

Five years ago her nervousness increased and in the past three years she has had increasing palpitation and dyspnea. There has also been an increase in the size of the gland. The administration of iodine, for several months, resulted in improvement only for a few weeks.

On examination the following pertinent observations were made:—The patient was obese and her hair and skin dry. The brow did not wrinkle on looking up but there were no other eye signs. There was a large nodular mass in the thyroid area, most prominent on the right side, and over this area a soft systolic bruit was heard. The fingers showed a fine tremor. The patient was obviously dyspneic and very emotional, weeping during the examination. The pulse rate was ninety per minute, the blood pressure 135/70. The heart showed no marked abnormality. Her basal metabolic rate was plus 23.

At operation I removed a large, irregularly nodular mass with a preponderance of colloid areas but, here and there, small areas of gland approaching the normal in appearance. Comparatively little tissue could be left. Though her convalescence has been uneventful so far, because of her hypothyroid evidences before operation, I imagine it will be necessary to give her thyroid extract.

The nodulations produced, according to Reinhoff, by involution, are those called adenomata by Aschoff, Hellwig, and others who regard them as true new growths. If the involution of a given area is unusually marked it results in a cystic adenoma, less marked a colloid, or a foetal adenoma, etc. Reinhoff thinks that only



8 per cent of all the nodular goitres he has studied in Baltimore belong to the true new growth group and that 92 per cent represent various involution stages of hypertrophic and hyperplastic glands.

For many years there has been a great deal of controversy about the effect of iodine on adenomatous tumors, the question being hotly debated. In our experience iodine frequently benefits cases with toxic nodular goitres and I have never seen it harm them. If the nodules are involutional in origin one would expect this result. There is at present little evidence to support the idea that new growths, speaking in terms of the involution theorists, are toxic, nor is there much evidence to support the idea that they are made more so by iodine.

Based upon the involutional theory the large majority of goitres seen outside endemic goitrous areas are originally hypertrophic and hyperplastic changes, while a higher per cent are new growths in the recognized goitrous districts. From this we might well conclude that the simple enucleation of what seems to be a cyst adenoma of the gland in the gross, should rarely be done in our section. The preference should be given to a more radical subtotal thyroidectomy unless there is evidence showing the nodule to be a true new growth of benign type.

Some very interesting ideas have recently been advanced as to the part yeasts and enzymes may play in the production of goitre. McCarrison years ago pointed out that there is a relationship between fecal contamination and goitre. Recently it has been shown that yeasts may have something to do with the production of enzymes which, in a round-about way, increase the demand made upon the thyroid. The presence of iodine in minute amounts in the soil and in the water lessens the multiplication of yeast organisms. The chief source of yeasts are, of course, vegetables grown close to, or in, the soil, such as cabbage, carrots, potatoes, etc., and drinking water.

Clinically, hyperthyroidism varies considerably in its manifestations. From the typical exophthalmic goitre with bulging eyes, flushed skin, rapid pulse, extreme nervousness and hyperactivity, tremor of the fingers, high pulse pressure, and loss in weight, we pass by gradual stages to the type Lahey terms "apathetic."

In this individual there is little, or no, exophthalmous, a small firm gland, a relatively slow pulse rate, repose, or even apathy. Thus evidences of hypothyroidism are fairly often seen in company with those of hyperthyroidism, and in the absence of a clearly abnormal gland, these cases may be extremely confusing. Careful observation, with repeated metabolic determinations, usually will clarify the situation.

At the present time I am observing a young woman who, I believe, will fall into Lahey's "apathetic" group. She complains of nervousness and weakness and is unstable emotionally. She presents, nevertheless, a generally apathetic appearance. Her skin is sallow. There is no visible or palpable abnormality of the thyroid, except that it may be a trifle firmer than usual. The eyes are not abnormal nor is the heart, but there is a fine tremor of her fingers and her basal metabolic rate is plus 47. She is being kept under observation. Her basal metabolism will, of course, be repeated at a later date. If it is again found elevated, I feel we would be safe in classifying her as a hyperthyroid case.

As they vary clinically so also may they vary in their reactions to operation. The extremely active hyperthyroid, when operated upon, sometimes has a post-operative thyroid crisis and dies in a state of tremendous activation of all the signs of hyperthyroidism, cardiac, respiratory, motor and mental. The apathetic type may sink gradually into a post-operative stupor and die gently without any of these signs of activation. It is in this last group that the surgeon is most apt to over-step the bounds of safety in his operation, and the medical man most apt to overlook a hyperactive thyroid.

It is these hybrid cases, the failure of an iodine remission to behave as a spontaneous remission does, the failure of iodine to produce a second remission, or to be beneficial over a long period of time, and the unknown part that must be played by contamination, that labels all the theories of goitre as theories only, and not facts.

It would, perhaps, be well to summarize clinical thought and practise:—Iodine given for the first time will produce improvement in 95 per cent of hyperthyroid cases and probably does no harm to adenomata. It rarely, if ever, cures, and its use should therefore be strictly

limited to preparation for operation. Its maximum benefit usually occurs in from 7 to 21 days. The usual dose is 30 to 40 minims daily. Operation should be done at the point of maximum improvement. With iodine the large majority of cases can be done in one stage, but, if the loss in weight has been great, two stages are thereby suggested. The use of sedatives, digitalis, quinidine, the choice of anaesthetic and the post-operative use of iodine must be varied to suit the individual case. The importance of the closest co-operation between the clinician and the surgeon cannot be over emphasized.

It is not necessary to review the surgical technique, but a few details we have found valuable should be mentioned. The use of a basal anaesthetic has greatly improved results in all surgical clinics. It permits us conveniently to give the patient sufficient anaesthetic in his room to alleviate all fear, and, if necessary, to avoid his knowing anything about the operation. In other words, it facilitates "stealing the gland."

Avertin is used with satisfaction in a great many clinics but, after a short trial, we discarded it in favor of amytal and luminal given by mouth. I have never given these drugs intravenously as a basal anaesthetic. Between one and 1 1-2 grs. for every ten pounds of body weight, depending upon the degree of toxicity, is given by mouth two hours before operation. I have not been willing to give over 18 grs. With it is given 1-8 of a grain of morphine, also by mouth. Thirty minutes before operation 1-8 gr. of morphine and 1-150 gr. of atropine are given by hypodermic. On going to the operating room, the patient should be sufficiently "dozey" to notice little, or nothing, but it should not be difficult to arouse him enough to get his attention at least momentarily. Either local anaesthesia or ether are then used during the operation.

Our results with this method have been most satisfactory, though Barbituric acid drugs are thought by some to be contra-indicated in hyperthyroid cases. We have always preceded this administration by a few small doses of the drug, for a night or two, in order to assure ourselves there was no idiosyncrasy.

The recurrent laryngeal nerves will rarely be

injured if a shaving of gland is left posteriorly and especially if the shaving is made with the knife cutting laterally away from the trachea instead of toward it. The same can be said of the parathyroids, though I have recently seen a typical parathyroid tetany follow the removal of one lobe without the other lobe having been in any way disturbed. It was subsequently removed at a second stage operation without the recurrence of the tetany.

Though we have not done so, it might be well to use small doses of calcium lactate, pre-operatively, and it should not be forgotten that occasionally calcium lactate will aid materially in reducing the pulse rate in a tachy-cardiac intractable to iodine.

From my own experience, I might add that here in South Carolina we are usually dealing with a much less toxic type of patient than are the men in the goitre districts. This should be borne in mind in reading their articles, especially when discussing such matters as the amount of thyroid to be left. I believe that in hypertrophic glands we should leave a little more of the gland than they advise, and that we should be a little more radical in dealing with solitary nodules, not usually being content to remove only the nodule.

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#### DISCUSSION

Dr. George R. Wilkinson, Greenville:

Dr. Doughty has brought out very clearly the difference between goitre that produces an enormous increase in the pulse pressure, the fast pulse and the extreme picture ordinarily seen in goitre areas and the milder type of goitre seen in this section.

That patients with the milder type of goitre have definite episodes in the course of the disease is a point that I want to emphasize. I have in mind a patient who apparently has a worn out goitre. Her basal metabolic rate is low. She has had distinct recurrences over a period of thirty to forty years of what I would consider definite hyperthyroidism. The patient is now in the sixties and there are many reasons why nothing in particular should be done about the gland. Cases of this milder sort of goitre get sick and get better and go along for a long time usually undiagnosed. When they finally present themselves for treatment, exophthalmos and the bizarre findings associated with hyperthyroidism are not present. The presenting complaint is that of dyspnoea, weakness, general disability, etc., recurring after intervals of good health.

The basal metabolic rate frequently is not increased. However, in many cases in which the metabolic rate



is not excessive the removal of the thyroid gland produces great improvement.

In this section, thyroid disease is much milder than it is described in the voluminous literature from the "goitre belt." For this reason milder goitres are overlooked. From the number of goitres seen in a limited practice, I believe that there are many more nodular goitres in South Carolina than we ordinarily think.

Another point Dr. Doughty made worth emphasizing is that of "stealing" the gland.

Thyroid surgery differs from other surgery in that it is a physiological sort of an affair. The psychological handling of the patient is a definite problem that does not occur in taking out an appendix or taking off a man's leg. The doctor wants to get the idea of operation entirely out of the mind of the patient, when and where the gland is to be removed. Such a state of mind spares the patient an enormous amount of worry which is a consideration of no little moment for these people who have had goitre for a long time and fear the knife.

In my opinion it is much wiser to have a suspicious gland taken out than to leave even a questionable gland in the neck. The cumulative damage to the cardiac mechanism from the milder type of goitre is hard to show until functional impairment occurs, which is a result the careful clinician should seek to forestall by a timely diagnosis.

Dr. L. H. McCalla, Greenville:

Dr. Doughty has made a classical presentation of this subject. Would like to say just a few words about it, for there is nothing in my experience in surgery that has given me more satisfaction than dealing with goitres.

It is interesting how surgery of the thyroid gland has developed. We accepted antisepsis about 1890 in this country; and the surgical treatment of thyroid diseases has progressed accordingly, developed mainly by Crile, Halstead and C. H. Mayo. It is very fitting that this subject should be presented at this time, when Dr. Crile is to be our guest speaker. His work along this line of adopting combined anesthesia and his sharp dissection, avoiding trauma, preventing post operative crises is greatly responsible for the advances made in goitre surgery. Just a few years ago as a medical student, goitre operation was considered just about the worst thing that could happen; but now, with the administration of iodine, selecting the proper anesthetic, and such things, it has been made a very safe procedure. Lots of times we see patients whose doctors have told them to let their goitre alone, that it is a bad thing to fool with, that it will kill them to have it interfered with, and those things. But those prejudices have been gradually overcome, and the mortality in goitre operations has been reduced to one per cent, or less in some of the large clinics.

I enjoyed Dr. Doughty's paper very much.

Dr. George T. Tyler, Jr., Greenville:

There are just one or two things I want to say in regard to this excellent paper. Other methods have been used for the removal of nodular toxic goitre, but there is only one way to get it out, and that is by surgical removal. I think it is hardly necessary for me to repeat the very great importance of not using iodine on these cases until operation is decided upon. If one of these thyroids is quiet—when I say "quiet" I mean the patient getting along well, having no symptoms—if you use iodine the chances are that you will light up that process and the patient then will have evidences of hyperthyroidism.

I think the idea of taking out too much of the gland sometimes frightens us; but when we see so many cases of heart disease, for instance, in which the whole thyroid gland is removed and the resulting deficiency is replaced by the administration of thyroid extract, it ought not to alarm us that there may be too much tissue removed when these patients are subjected to operation.

Now, as to the question of whether patients having a mild degree of hyperthyroidism should be operated on, my feeling is that those patients should be studied and not rushed to operation. Then, if operation is decided upon, it should be done. They should certainly not be put in a class of which it is said, "These patients should not be operated upon." They should be observed for weeks or months, and then the decision made as to whether or not an operation should be performed.

Dr. C. B. Epps, Sumter:

I would like to say a few words on two points. The first is whether to keep your patient in the hospital a while and give him a little ether one morning and a little bit the next morning, maybe, and do what you call "stealing" the thyroid. I think nature has endowed us all with a certain reserve of energy so that when we decide to do a thing we are braced up for it, and the quicker we can get through with it the better. I think we would rather see a man coming towards us with a knife than have him sneaking up behind us with a knife. I think the sooner we can get through with it, the better for the patient. I think the only excuse for long hospitalization pre-operatively is to get your patient prepared physically for the operation. I prefer to tell my patients when I am going to operate on them; then you do not have to "steal" the gland away. I give my patient avertin, giving it in his room. Then when he wakes up the thyroid is out.

I consider thyroid operation, carefully done, one of the safest kinds of surgery. I have never had a serious postoperative hemorrhage or a serious infection after it. I did my first thyroid twenty years ago, and I have done at least as much thyroid surgery as the average general surgeon. In that time I have lost one case, a case that died on the fourth day. That case had a myocarditis. I have never had a case of loss of voice. Anyway, most of those operated on

are women, and the loss of voice would be temporary, anyway. I think we have built up the idea too much that thyroid surgery is such a terrible form of surgery.

I thank you.

Dr. Wm. H. Prioleau, Charleston:

I should like to make just one remark. The question is frequently asked, how much thyroid tissue should be removed, or is it safe to remove a large amount? My answer is this: —In cases of hyperthyroidism—barring total thyroidectomy—too much gland cannot be removed; regardless of whether it is the exophthalmic type or the nodular goitre, the best plan is to remove as much of the glandular tissue as we safely can. By "safely" I mean with due respect to the safety of the recurrent laryngeal nerves and the parathyroid bodies. This leaves a small strip of thyroid tissue on each side of the trachea. The question is, is this sufficient? The answer is no, not for the time being. But within the period of a few months, in almost every case, the two small strips of glandular tissue will increase in size sufficiently to give the patient a normal thyroid balance. The danger in thyroid surgery is incomplete operation; and I would say that, conservatively, eight or nine out of ten so-called recurrences are not recurrences at all but are due to incomplete operation. While not infrequently we do have thyroid deficiency after operation, it occurs early and is transient. It generally portends

a good result. However there is an occasional case of permanent deficiency—this condition is easily corrected by thyroid medication by mouth.

Dr. Doughty, closing the discussion:

I have not very much to add but simply wish to say that I appreciate very much the discussion and I hope the paper has given those of us who are in general practice something on which to hang the idea as to how iodine should be used.

Dr. Epps, I should like to add this. Most of the patients in South Carolina with hyperthyroidism or toxic nodular goitre or any other type of goitre can be operated on without "stealing" the gland. But with those patients who are really extremely toxic, if anybody is coming to them with a knife, even if it is in front of them, they react just as you would with a knife behind you, and those glands have to be taken out, if it is to be done with safety, under a basal anesthetic. I think few of us now advocate the idea of using ether one morning and varying the breakfast the next and that sort of thing, before really operating.

I have the greatest respect for avertin, but for thyroid surgery I prefer to use luminal or amytal, because of its better effect on the patient.

Many of these people are extremely toxic, and if you tell them when you are going to do the operation you will not do it that day; you will do it another time.

#### ANDERSON COUNTY MEDICAL SOCIETY MEETING

The regular monthly meeting of the Anderson county Medical Society was held at the John C. Calhoun Hotel on Wednesday, October 14, 1936, at noon.

Dr. James A. Hayne and Dr. G. E. McDaniel of the State Board of Health were present and discussed the problem of venereal diseases and their control.

Dr. Hayne presented numerous charts in his discourse, emphasizing the role syphilis plays in the U. S. and results that can be expected if proper treatment is administered. He stated this was a nation wide program and was not limited to S. C. A Co-operative Clinic Group has been appointed to determine the best methods of treatment.

The State Board of Health is mainly supporting the Educational Program and helping to secure government aid. It desires the actual routine work to be handled by the county societies. Each county is to appoint a Syphilis Committee to investigate local conditions and make recommendations. This report is to include what should be done in the county and what plan is best suited for local needs.

The following doctors were appointed to serve on the committee for Anderson County: H. M. Daniel

(Chairman), J. M. Feder, Frank Wrenn, Goodman Bare, and J. W. Martin.

Dr. E. A. Hines of Seneca, S. C., was also one of our distinguished guests. He reported plans were well under way for the State Medical Meeting to be held in Columbia next April. Dr. Morris Fishbein of Chicago, editor of the J.A.M.A., and Dr. Cannon, a dermatologist of New York, have been secured as speakers. Dr. Hines also stated a committee was now at work making an investigation of the Hospital Service Plan. North Carolina has tried out the plan under the backing of the Duke Foundation. The problem in S. C. at present is how to put a plan in use without money. He has high hopes that the Duke Foundation will also sponsor S. C.

The meeting was thrown open for discussion and Dr. Hayne answered many questions that had not been answered in his regular talk.

There were 26 members and 4 visitors present for the meeting.

After the discussions had ended, the group adjourned and gathered in the hotel dining room, where luncheon was served.

Herbert Blake, M.D.,  
Secretary.



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DECEMBER, 1936

THE MEDICAL COLLEGE

The Medical College now has an attendance of 174 medical students, 25 pharmacy students, and 101 nurses, a total of 300 students.

It is well known that in recent years entrance requirements for medical schools have become somewhat more stringent with undoubted improvement in the type of student who enters school and the type of medical graduate. Applications in all medical schools exceed the

number which any school can accommodate and our own medical college is no exception to this situation. There were 590 applications for this year's freshman class, which now consists of 42 members. The applicants were classified as follows:

Qualified from South Carolina	128
Qualified from out of state	136
Probably qualified from out of state	226
Total Qualified	364

This means that there were 76 applicants from South Carolina who presented the necessary scholastic qualification but were not accepted. Obviously the school with limited funds, equipment, and personnel can handle properly only a certain number of students and indeed it is desirable from all standpoints that classes be small and well instructed rather than large and superficially taught.

The Committee on Entrance, of which Dr. O'Driscoll is chairman, has had many difficult decisions to make in determining which of the numerous applicants were best suited for the study of medicine. Acceptance has been made on the basis of the now rather generally used aptitude tests and as far as possible by personal interview. In not a few instances the committee has been subjected to considerable pressure which aims to secure admission of students whom the committee had not thought desirable.

The freshman acceptances were made very early and the class was practically complete by the end of the last session. It now includes 42 South Carolina students who have seemed to an unprejudiced committee to be the most promising material from which the profession of the state will be largely recruited in the future.

Using the newer tests for aptitude, examiners find that not infrequently the men who have more comprehensive credits are later less proficient in medical studies than some of the men who have spent a shorter time in academic college. This observation does not depreciate the value of an academic degree, for it is only reasonable to suppose that the men who show more aptitude would exhibit even higher performance had they completed more preliminary academic work.

J. I. W.

## THE UROLOGICAL ASSOCIATION OF SOUTH CAROLINA

DOUBLE URETERAL TRANSPLANT—  
CASE REPORT

By J. McMahan Davis, M.D., Columbia, S. C.

Young woman, 23 years of age, entered the Columbia Hospital April 25, 1933, complaining of frequency and pain over bladder region. Finds it necessary to void every few minutes and she is unable to sleep at night due to this frequency.

About two years ago the patient noted that her bladder capacity was not up to normal and it caused great pain when she was forced by circumstances to refrain from emptying the bladder for a great length of time. The frequency increased and the capacity diminished until the past few weeks have been a torture to her.

Her past history was essentially negative and physical examination showed no pathology save a tendency toward obesity. Blood picture and urinalysis were normal. Wassermann negative. Cystoscopic examination, under spinal anesthesia, showed an irritable bladder with about sixty cc. capacity. A definite area of submucous cystitis was visible, which reached a length of three to four inches when bladder was forcibly dilated. This area was thoroughly fulgurated and relief was immediate. Following this the bladder was dilated systematically, and at the end of a few weeks the capacity had increased to 225 cc. Cystoscopy at this time showed no involved areas that had not been reached by the fulgurating electrode. An acute pyelitis developed after these dilatations but subsided in four or five days.

The patient was told that the relief would not be permanent and fulguration would be necessary in from three months to two years.

She returned one year later, May 1934, when area was again fulgurated. Relief was not of long duration and she returned for another treatment. At this time Pyelograms were made and a guinea pig was inoculated in an effort to connect a tuberculous process with the submucous cystitis. Both of these tests were negative and the patient was again fulgurated.

She next returned in June, 1935, and was fulgurated. Later she returned for another urological examination and no tuberculosis was found. At this time intravenous urography showed dilation of ureters, though this was not marked. Patient was now advised to have a ureteral transplant. She left the hospital to return later for this.

Patient returned to the hospital February 7, 1936, and gave full consent to have the operation. She was given a complete examination and re-check. On February 21st patient was operated upon under spinal anesthesia and a double ureteral transplant done as follows: mid-line incision into the peritoneal cavity, intestines walled off and pelvic area clearly exposed. Both ureters were located and, after incision of peritoneum over them, they were mobilized for about six inches of their length. The lower sigmoid was brought in apposition to each ureter and the site for anastomosis selected. Incision was made in the striae of the intestine through the serosa and muscular coat and the mucosa separated for a half inch on each side of the incision. A linen suture was then passed into the lumen of the ureter and out again; this suture was continued through the mucosa into the lumen of the intestine, was passed through a ring which was previously introduced into the intestine through the rectum and the suture was then continued out of the mucosa into the operative field. This suture was then tied tightly to exert its crushing effect. The ureter was then buried into the wall of the intestine by the apposition of the muscular coat and serosa over it. This process was repeated for the other ureter. The wound was then closed with the usual closure. To insure sloughing a string was attached to each ring before insertion into the rectum and end of string left protruding outside. This would allow the exertion of pressure should it become necessary.

Two days later patient thought she passed urine through the rectum. On the third day one ring with its crushing suture passed and on the fourth day the other ring was expelled.



Methelyn blue was excreted in a watery stool and apparently the greater part of the urine was expelled by rectum.

Convalescence was not smooth, but was not unduly alarming, and, when the patient left the hospital she was comfortable at all times and voided only a small amount of urine every three or four hours, the remainder being expelled through the bowel. Three months later the patient was still comfortable.

It will be noted that the ureters were allowed to continue drainage into the bladder as it was not annoying to the patient and we felt that it was an additional safety measure.

#### CONCLUSIONS

Although the presence of dilated ureters kept

this from being an ideal case for ureteral transplant, the result has been excellent. And, while the operation must be thought of and classed as a major operative procedure, it is by no means a forbidding one. Its development gives us a method of relief for those who have incurable bladder involvement, whether malignant or otherwise.

It is generally conceded that bladder tumors metastasize later and invade the surrounding tissues slowly; and that death usually comes from intercurrent renal infection rather than from the malignancy itself. This being true, does not a ureteral transplant with subsequent removal of the bladder offer the best solution for this problem?

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## EYE, EAR, NOSE AND THROAT

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J. F. TOWNSEND, M.D., F.A.C.S., CHARLESTON, S. C.

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### TREATMENT OF ATROPHY OF THE OPTIC NERVE

*Prof. H. Lauber*

Arch. Ophthal., Oct. 1936, pg. 555

The treatment of atrophy of the optic nerve is approached by Prof. Lauber from an entirely new angle, but one from which to claim results. I try to make anatomy and physiology the foundation of my teaching, not to simply pronounce that such is the case, or such a treatment should be used, but by relating it in each case to the anatomy and physiology, show why it should occur or be so. Prof. Lauber discusses optic atrophy to a greater extent from the point of view of its occurrence in tabes. In which disease he says that the general arterial pressure, especially the diastolic, is low. This influences the blood pressure in the retina, which is normally, systolic 70-80 mm.; diastolic 40-56 mm. "Therefore, the lowest level of the vascular tension in the retina lies 14 mm. above the highest level of the normal intra-ocular tension (26 mm.)."

This is the necessary condition for normal circulation in the capillaries of the retina. If the relation between the intra-ocular tension and the arterial pressure is diminished, there is re-

sulting disturbance of the capillary circulation, the normal level of which lies between 33 mm. diastolic pressure, and 55 mm. (systolic pressure.).

The rise in the intraocular tension in glaucoma reduces the difference between intraocular tension and the capillary blood pressure; the intraocular pressure in some cases rises above the level of the intraocular diastolic blood pressure, thus slowing down or totally obstructing the capillary circulation.

Since the retinal tissues are, as all central nervous system tissues, especially sensitive to lack of oxygen, a marked diminution in retinal function results.

A high blood pressure is therefore beneficial for cases of glaucoma.

A high blood pressure in tabes is a good sign.

A low diastolic retinal arterial pressure with a low intraocular pressure tension is O.K.

The blood pressure in tabes is very liable, it often drops from unusual causes, causing a consequent diminution between the intraocular blood pressure and intraocular tension, producing diminished vision.

So one must either raise the general blood pressure, which cannot be easily done, or lower the intraocular tension or both.

The blood pressure in tabes may appear low periodically; this explains the reason for the variations in the vision in tabes.

Discard the iodides, mercury and arsphenamines with lowered blood pressure; diminish the intraocular by pilocarpine or operation; and raise the general blood pressure by strychnine injections.

First raise the general blood pressure by injections of strychnine and appropriate diet. (Later hormonal treatment, and lower intraocular tension by 2 per cent pilocarpine solution or operation—cyclodialysis). Then use treatment with neoarsphenamine.

There is a parallelism between the rise of retinal arterial pressure and the fall of intraocular tension. Treatment of syphilis is injurious to the retina if administered during a period of low blood pressure, as is shown by case reports; but if the blood pressure is first brought up (to normal) the treatment can then be given without harm to the vision. "If, however, the

blood pressure is kept high or the intraocular is kept low, this noxious influence of the treatment for syphilis does not appear." "Mercury, iodides, arsphenamine and other combinations of arsenic and bismuth and malarial therapy," can be given without harm, "as long as the vascular pressure is not low or is not lowered." Examine for contra dilatations as the cause of low blood pressure.

Essentially, the cases of tabetic atrophy of the optic nerve do not differ in principle from cases of glaucoma. In both groups the normal relation between the intraocular tension and blood pressure is altered, the difference between the two being diminished.

The essential factor in the treatment of tabetic atrophy is to reduce not only the intraocular tension by trephining, sclerotomy, or repeated punctures but to also raise or keep up the blood pressure.

In prevention of tabetic atrophy do not treat by certain medication in the period of low blood pressure.

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## PATHOLOGICAL CONFERENCE, MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA

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KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

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### ABSTRACT NO. 319 (31913)

*Case of Dr. W. A. Smith*

May 1, 1936

Student Gregg (reading):

A white man, age 54 years, admitted to Roper 1-29-36, discharged 1-31-36. Admitted to Pinehaven 1-31-36, died 4-2-36.

History: Patient was perfectly well in Sept. 1935, although he had apparently had some illness during the summer of 1935, for which he was advised to have his teeth extracted. He had several removed. In Sept. was seized with sudden sharp pain in left side. No cough or fever at this time. He returned to his dentist for further tooth extractions and was advised to see a physician. At this time he had a temp. of 102, and fever persisted for about 5-6 weeks. During this time the appetite was good, and there was no cough or night sweats. After the fever subsided, the patient continued

to have his teeth extracted. Afternoon weakness developed while doing work as a clerk, and frequently he was unable to finish out the day's work. On Jan. 21, 1936, he felt very badly and went home. That night he had a severe coughing spell, and thick, tenacious, slate-colored sputum was expectorated. Frequent night sweats for several weeks before hospital admission. Questionable weight loss. No direct exposure to tbc.

Exam.: A somewhat emaciated man, temp. 99, pulse 84, resp. 20, BP 110/70. Only 5 teeth remain, these carious; gums are ulcerated. Pharynx normal. Anterior cervical lymph glands enlarged. Chest: Expansion slightly diminished on right, some retraction of upper portion of right chest. Tactile fremitus greater on right. Some impaired resonance over upper portion of right chest anteriorly and posteriorly. Fine and medium rales over right



chest anteriorly down to 4th rib. Bronchial breathing (?) over 2nd rib in right midclavicular line. Heart: not apparently enlarged, sounds of good quality, no murmurs. Pulsation in 2nd interspace just to right of sternum. Radial arteries normal. Remainder of examination negative.

Lab: Urine (2 exams) completely neg. Blood (1-29; 2-2; 3-26; 3-28; 4-1): Hb. 76; -; 73; 69; 65 (D). RBC -; 5,410,000; -, -, -. WBC 9,600; 13,750; -; 16,250; 51,000. Polys 61 per cent; 84; -; 84; 1. Blood Kolmer and Kline tests neg. Sputum (6 specimens): leukocytes 3-4 plus; no t.b.; mixed organisms 2 plus; Culture for t.b. and higher fungi neg. Pleural fluid cultured: (3-25) neg.; (4-2) neg. for higher fungi. Guinea pig alive and well 4 weeks after inoculation. Feces for ova and parasites, neg. X-ray of chest (1-29; 2-25; 3-21): See chart. Mantoux strongly positive (2-25).

Course: Temp. almost constantly above 99 for first week, varied between 98 and 99 for next two weeks. From then until death showed daily afternoon rise, about 9-101, with fall during the night to about 99. Pulse 80-140, following temp. curve closely. Pneumothorax begun on right side on 2-3-36, which, by successive refills, amounted to a 50 per cent collapse on 2-9. A small amount of fluid was noted in the right chest on 2-10. After feeling fairly well for several weeks, on 3-24 patient began to complain of pain in right chest, worse on deep breathing. On 3-25, 1000 cc. of blood-tinged fluid was aspirated. (Pleural fluid showed polys predominating, few RBC). On 3-26 chest was aspirated again, almost undiluted blood being obtained. On 3-27 aspiration in 7th interspace showed clotted blood and "needle felt as if it were entering almost solid lung." Aspiration in 5th interspace gave 200 cc. of clear fluid. On 4-1, foul pus was obtained on aspiration. Became semicomatose and died on 4-2-36 at 1:40 P.M.

Dr. W. A. Smith (conducting): I first saw this patient about ten years ago. At that time he had a rather sudden attack of pleurisy, for which I treated him, but he left my care before a definite diagnosis was made, his symptoms having cleared up meanwhile. Then he was admitted to the Roper Hospital, as recorded on

the abstract. This x-ray was made then. Mr. Able, will you interpret this film?

Student Able: There is a markedly increased density in the middle lobe and apex of the right lung, and there is a questionable cavity in the region of the right hilus.

Dr. Smith: Yes, and the diaphragm on that side is very irregular, and the right costo-phrenic sinus is somewhat obliterated, suggesting the accumulation of fluid there. Now on the basis of the history and this x-ray what diagnoses would you consider?

Student Able: Pulmonary tuberculosis seems the most likely.

Dr. Smith: Yes. His first blood count at Pinehaven showed 13,750 white cells with 84 per cent polymorphonuclears. This seemed to us to suggest the so-called "septic type" of tuberculosis, and pneumothorax was begun. His sputum had been persistently negative, however. Now, Mr. Baker, interpret this x-ray, taken after he had been in Pinehaven about a month.

Student Baker: The upper portion of the right lung appears collapsed, and the absence of lung markings indicates pneumothorax. The lower lobe is very dense and only slightly collapsed.

Dr. Smith: Yes, and there is a small amount of fluid in the pleural cavity.

His pneumothorax was continued, and his temperature came down and he felt generally better. Then he had a sudden pain in the right side. This type of pain is not uncommon in pneumothorax patients, and it is usually due to a pleurisy. Somewhat later, the chest was aspirated, and 1000 cc. of a slightly blood-tinged but otherwise clear fluid was obtained. In the meantime, no tubercle bacilli could be found in repeated examinations of ordinary specimens of sputum, or in specimens which had been concentrated. A guinea pig was inoculated with the concentrate from some of the pleural fluid, and this also had negative results.

In view of his extensive pulmonary lesion and the absolute failure to find evidence of tuberculosis by these various methods, we then felt that we could rule out tuberculosis. What other diagnosis would you consider then, Mr. Baldwin?

Student Baldwin: Carcinoma of the lung and gangrene of the lung must be considered.

Dr. Smith: What do you think, Mr. Bernstein?

Student Bernstein: Abscess of the lung must also be considered.

Dr. Smith: Mr. Booker, how about syphilis of the lung?

Student Booker: There is no history of syphilis, and the blood Kolmer and Kline tests were negative. I believe that we can rule out syphilis on those two counts, altho the x-ray is somewhat suspicious. Fungus infection must also be considered, but that seems to be pretty well ruled out by the persistently negative cultures and sputum examinations.

Dr. Smith: Yes, we felt that we had ruled out fungus infection; that was another diagnosis to be considered. Now, Mr. Bethea, this last x-ray was made on March 21st. How would you interpret it?

Student Bethea: It looks like a pleural effusion, but it also looks like a hydro-pneumothorax.

Dr. Smith: Mr. Wallace, why don't you think this is a hydro-pneumothorax?

Student Wallace: There should be a horizontal fluid level if it were a hydro-pneumothorax.

Dr. Smith: Yes, that's right. Now after this film was taken, the chest was aspirated again, and foul-smelling pus was obtained. Mr. Harrison, how would you trace the course of events in the case?

Student Harrison: Considering the man's age and the course as outlined, I am rather inclined towards the diagnosis of carcinoma of the lung, which later became secondarily infected. I believe that tuberculosis and fungus infection are satisfactorily ruled out.

Dr. Smith: Mr. Pendino?

Student Pendino: I believe that it was a carcinoma of the bronchus, which infiltrated the lung and pleura and then became infected, so that an acute empyema was the final outcome. The fact that the original pleural fluid was blood tinged seems to be of some significance in the face of a possible diagnosis of carcinoma.

Dr. Smith: Mr. Bernstein, didn't you make the diagnosis of pulmonary abscess?

Student Bernstein: Yes, sir. We have a history of dental infection, with extraction, and that is a very common history in cases of lung

abscess. The physical findings, blood count and negative laboratory data rather bear out that diagnosis. In the x-ray picture, however, there is no definitely circumscribed abscess, but more of a consolidation, and I believe that we can rule out abscess of the lung.

Student Baldwin: The pulling of infected teeth could easily give rise to a pulmonary embolism, with gangrene developing there.

Student Harrison: Doesn't gangrene give a very foul odor to the breath?

Dr. Smith: This man's breath had a foul odor late in the course of his illness. If this case were one of gangrene from the beginning, he would not have lived nearly as long as he did, though. If his condition terminally was gangrene, it was superimposed on some other condition.

Dr. Smith: Mr. Elders, what may have happened during the course of his acute pleurisy that caused him to become rapidly worse?

Student Elders: I believe that his pleural cavity was probably already infected at that time. The rubbing together of the roughened pleural surfaces could have caused the pain.

Dr. Smith: This is aside the case, but we do not now believe that pain in pleurisy is due to the rubbing together of the inflamed pleural surfaces. If so, we could always relieve the pain by pneumothorax. Too, we frequently hear friction rubs, which surely indicate the rubbing together of inflamed surfaces, without there being any pain.

Mr. Goodlett, what do you have to say about the case?

Student Goodlett: No one has commented on the pulsation to one side of the mid-line. I suppose that that is of no importance, but the possibility of an aneurysm must also be considered.

Student Quantz: I have read that pain in carcinoma of the lung remains constant after it first appears. If that is true, its disappearance in this case would seem to be against the diagnosis of carcinoma.

Dr. Robert Wilson, Jr.: Were the fingers or toes clubbed?

Student Gregg: No, they were not.

Dr. Smith: When this man went to autopsy, we thought that he had a primary carcinoma of the lung, with secondary infection and ab-



cess formation, followed by pyo-pneumothorax. We thought that a spontaneous pneumothorax had probably occurred at the time when his pain became severe, after which he rapidly became worse. Spontaneous pneumothorax is not uncommon in patients who have an artificial pneumothorax, and frequently it gives rise to a serious outcome. Here we thought that the pyo-pneumothorax resulted from the spontaneous pneumothorax.

Dr. Lynch: Mr. Gasner, suppose someone told you that this man also had a nodular enlargement of the testicle. How would that have affected your diagnosis?

Student Gasner: I would think pretty strongly of carcinoma of the testicle, with metastasis to the lung.

Dr. Lynch: Well, this man had an enlarged testicle, and when it was noted externally at the time of autopsy I imagine it caused a little trepidation among the clinicians present. It turned out to be a varicocele, however.

Here we have the right lung (showing autopsy specimens), in the pleural sac of which there was a large, foul purulent exudate. This odor was doubtless due to infection by an anaerobic organism. The lung is adherent to the parietal pleura in the axillary line, and there is a sinus tract which caused the abscess cavity to communicate with the pleural cavity. This sinus was brought about either by spontaneous rupture of the pleura (a spontaneous pneumothorax) or by puncture of the lung during aspiration of the chest. Pyothorax then developed by infection of the pleural fluid already present.

At the time of autopsy, Dr. Peery believed that it was a case of carcinoma of the lung, because the lung tissue about the abscessed area was so solid. The bronchus communicated with the abscess cavity, and about this portion of the abscess wall the tissue seemed to fungate. It was not a carcinoma, however, as microscopic examination showed that the condition was a simple chronic abscess of the lung.

Let's look at this first x-ray again. Here you see a cavity surrounded by an area of irregular consolidation. That is the common x-ray appearance in abscess of the lung, in spite of Mr. Bernstein's opinion to the contrary. Of course such an appearance can be gotten

in other conditions than abscess, but with a film like this one, abscess should certainly be seriously considered. Perhaps we can learn an x-ray lesson from that.

And from the record, I believe that we have a logical background for the development of an abscess of the lung. We know that suppurative disease of the lung not infrequently follows operative procedures upon the upper respiratory tract or the mouth, and as more and more autopsies are being done now, this is much more generally recognized than it was a few years ago. Under such circumstances, abscess may occur either by embolism or by aspiration of foreign material. To pathologists, the latter seems a much more likely explanation, although there are many who differ with this opinion. Foreign material can be so easily aspirated when the individual is under anesthesia, with the cough reflex abolished (and most of the cases occur after a general anesthesia), and after the foreign matter has plugged a bronchus and secretions have accumulated, infection is so easy that it is easy to understand this process. On the other side of the question, men believe that organisms are set free into the blood stream by pulling infected teeth, etc., and these emboli would naturally lodge in the lungs and produce abscesses. If this means of infection is true, though, it is very difficult to explain why the incidence of abscesses is higher under general anesthesia than under local, why operations upon infections in the arm or leg are so seldom followed by pulmonary abscess, and why the lung abscesses are so generally unilateral, with the right lower lobe (whose bronchus is almost straight and would permit easy aspiration) the commonest location of the disease.

The saprophytic, gas-forming organisms are the usual causative agents, and frequently the presence of these organisms will cause a gangrene of the lung. This may be either gangrene from the beginning, or a gangrenous infection may occur in a simple chronic abscess.

Student Booker: Dr. Lynch, do you believe that this condition was present for ten years? Dr. Smith tells us that this man had his first attack of pleurisy ten years ago.

Dr. Lynch: No, I do not believe that the abscess had been present that long. I think the abscess followed the extraction of the teeth

in the summer and fall of 1935. The previous pleurisy was probably tuberculous in origin; there was an old apical scar of healed tuberculosis on the left side.

Dr. Smith: I believe that bronchoscopy or the study of x-rays made after the introduction of an opaque medium into the bronchus, might have permitted us to make the correct diagnosis in this case. Still, it would have been very hard to rule out the possibility of primary carcinoma

of the lung, which is so frequently followed by abscess and empyema.

Pneumothorax is used by some individuals in the treatment of abscess of the lung, but if I had made the correct diagnosis in this case I know that I would not have used it. I believe that pneumothorax distorts the bronchus enough to inhibit free drainage from the abscess, and, by tending to diminish the amount of air in the affected area, permits the anerobic organisms to grow more readily.

## WOMAN'S AUXILIARY

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#### BOARD MEETING

The Board of the Auxiliary to the South Carolina Medical Association met in Rock Hill, November 5, 1936, at Winthrop College with seventeen members present.

The resignation of Mrs. W. F. Strait, State President, was regretfully accepted, and Mrs. T. R. W. Wilson, First Vice-President, Greenville, S. C., was appointed to the office of president. Mrs. A. Izard Josey, Columbia, S. C., was elected First Vice-President.

After the business session the Board was

entertained at a delightful luncheon by the members on the Board from Rock Hill.

Mrs. I. Jenkins Mikell,  
Press & Publicity Chairman.

#### MEDICAL AUXILIARY OF PICKENS COUNTY MEETS

The Pickens County Medical Auxiliary held its October meeting at the home of Mrs. J. L. Bolt with Mrs. A. M. Tripp as co-hostess, Mrs. Bolt, the President, called the meeting to order and the opening devotional was given by Mrs. Byrd Lewis. "A Sure Heaven" by Annie Johnson Flint, was read by Mrs. J. L. Valley. A prayer was offered by Mrs. S. E. Potts.

Following a brief business session Mrs. Bolt presented Mrs. T. R. W. Wilson and Mrs. L. O. Mauldin of Greenville. Mrs. Wilson, who is Vice President of the State Medical Auxiliary, talked on "State Activities." Mrs. Mauldin discussed "Student Loan Funds."

Mrs. L. R. Poole presented Miss Ruth Haines, who sang "O'! Car'lina." She was accompanied at the piano by Miss Harriet Martin.

Other out of town guests present were Mrs. Florence Porter of Houston, Texas, and Miss Jervey of Charleston.

The hostesses served a delicious salad course with coffee, nuts, and individual pumpkin pies.



## MEDICAL AUXILIARY NOW INCLUDES COUNTY

The Woman's Medical Auxiliary of Rock Hill met the first time as the York County Medical Auxiliary, announcement being made during the business session of the broadening of the organization to include the wives of all the doctors in the county.

Mrs. Frank Strait, state president of the medical auxiliary, was gracious hostess to the meeting at which this important step was taken, at her home on Park Drive.

The apartments in which 16 members were received for the transaction of other important business matters and for the hearing of a most instructive talk by Dr. E. E. Herlong, one of the physicians of the city, was lovely with colorful arrangements of fall flowers.

Mrs. I. A. Bigger, secretary, read a most interesting and comprehensive president's report.

Up for reconsideration was one of the most important phases of the auxiliary's work, that of the student loan fund. Mrs. J. R. Miller, president, reported on the local work of the committee, while Mrs. W. W. Fennell spoke of the aims of the entire state organization. Genuine interest centered in the announcement that Robert Moore, son of the late Dr. R. L.

Moore, was the present benefactor of the loan. Mr. Moore, whose home was in Rock Hill until several years ago, entered the freshman class of the Medical College of South Carolina at Charleston at the beginning of the present session. The York County Auxiliary pledged continuance of support of this work.

Following the announcement of county affiliation, Mrs. Miller cordially welcomed Mrs. J. G. Barron and Mrs. W. B. Jones, wives of York doctors, and Mrs. J. R. McGill, wife of a Sharon physician. Mrs. Barron invited the auxiliary to meet in York in December, the exact date of the meeting to be announced later.

Concluding business matters, an announcement was made of the addition of a small amount to the dues in order to defray expenses of the state organization. Mrs. W. R. Blackmon, treasurer, collected the 1936-37 dues.

For the afternoon's program, Dr. E. E. Herlong gave a most informative illustrated lecture on "Infections of the Kidneys." Mrs. Strait in behalf of the auxiliary expressed sincere appreciation to Dr. Herlong for this program and to the other doctors who cooperate in giving the auxiliary its fine educational programs.

During the social hour which followed, Mrs. Strait served a delicious two course refreshment menu—salad followed by coffee and cake.

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## INTERNAL MEDICINE

J. H. CANNON, M. D., CHARLESTON, S. C.

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### MASS PRODUCTION SYPHILOPHOBIA

*By George R. Wilkinson, M. D.,*

*Greenville, S. C.*

*An Inevitable By-Product of the War on  
Syphilis*

Human beings, having not evolved very far beyond their jungle ways and attitudes, are guided, not by reason, but by fear. Consequently it is to be expected, that, as the press, the radio, and other agencies, reach their stride in the publicizing of syphilis in the campaign for its control, the doctors will be deluged by otherwise normal people who have developed acute syphilophobias as they have begun to digest their fragmentary knowledge of the disease. Indeed it is to be expected that the first wave of casualties will not be those who have been wounded by the disease but those who have developed a campaign neurosis.

In the vast majority of these cases, the history taking, physical examination, and serological studies will give negative results. Nevertheless it will require all the tact and ingenuity that a physician possesses to reassure a large proportion of these people that, they do not have syphilis, have not had syphilis, and are not likely to have the disease. The negative Wassermann will not be sufficient for they will be told in the press that syphilis is a dread occult disease and even the miraculous and marvelous Wassermann does not always rule it out.

Consequently it behooves all of us not only to prepare to treat the increasing number of syphilitics who will be coming to us but also, to formulate some tentative approach by which we will be able to deal with an inevitable large group of syphilophobic non-syphilitic patients.

## SOUTH CAROLINIANA

J. I. WARING, M.D., CHARLESTON, S. C.

Cartilaginous growth, by A. E. Baker, Charleston. *South. Med. & Surg.* 98: 269, May, 1936.

A case report with discussion of the pathology.

"Healed" dissecting aneurysm of the aorta, by T. M. Peery, Charleston. *Arch. Path.* 21: 647, May, 1936.

A case report with autopsy findings. The patient survived fifteen and a half months after the dissection. Illustrated.

A state-wide investigation of hookworm in South Carolina, by W. S. Leathers, A. E. Keller & B. F. Wyman, (Columbia.) *Am. J. Hyg.* 23: 600, May, 1936.

The authors find a decrease of 33.5 per cent in the incidence of hookworm infestation in the past 20 years. The decrease was greatest in the western part of the state. Incidence varies with age from 12.9 to 32.4 per cent. The reduction has been less in this than in other states, and no concerted efforts have been made by official health agencies to improve the situation. An adequate program should include treatment, excreta disposal, and education.

Ischemic necrosis from ice bag "burn," by G. H. Bunch, Columbia. *Am. J. Surg.* 32: 519, June, 1936.

Discussion of the way in which cold causes local necrosis and explanation of the proper application of an ice bag.

Acute laryngeal stenosis in children, by E. W. Carpenter, Greenville. *South. Med. & Surg.* 98: 423, August, 1936.

Report of a series of cases with discussion of the relative merits of intubation and tracheotomy.

Cardiovascular syphilis, by T. R. Littlejohn, Sumter. *South. Med. & Surg.* 98: 314, June, 1936.

A short review of the subject.

A simple approach to the diagnosis of hyperinsulinism; report of 50 cases, by G. R. Wilkinson & E. B. Poole, Greenville. *South Med. & Surg.* 98: 465, September, 1936.

Outline of a method for finding the hypoglycemic patient, and for prescribing a satisfactory dietetic treatment.

After body, soul and spirit—what? by I. S. Barksdale, Greenville, *South. Med. & Surg.* 98: 471, September, 1936.

Echo answers,—What? A philosophical and theological discussion.

Characteristics of small colony variants with special reference to shigella paradysenteriae sonne, by B. D. Chinn, Charleston. *J. Infect. Dis.* 59: 137, Sept.-Oct. 1936.

A bacteriological study.

Operative insulin crisis in resection of the pancreas, by LeG. Guerry & G. T. McCutcheon, Columbia. *Ann. Surg.* 104: 662, October, 1936.

Case report of a rare condition, spontaneous hyperinsulinism, with death from resection of the pancreas. The authors caution against promiscuous pancreatic resection.

Leukocyte counts in malaria; analysis of 100 cases, by E. W. Townsend. *Charleston. South. M. J.* 29: 1026, October, 1936.

Correlation of blood counts with clinical manifestations.

The social origins of dietary habits, by R. E. Remington, Charleston. *Scient. Mo.* 43: 193, September, 1936.

The author traces the present day dietary habits of man, and finds that religion, commerce, advertising and such influence play much more of a part than do the contributions of chemistry and physiology.

Studies on the relation of diet to goiter. IV. The antigoitrogenic value of some foods, by



R. E. Remington, E. J. Coulson, and Harold Levine, Charleston. J. Nutrition 12: 27, July, 1936.

The authors find the antioitrogenic properties of various foods to be in proportion to their iodine content, as shown by experiments with rats.

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Allergens in prevention and treatment of hay

fever and bronchial asthma, by I. S. Barksdale, Greenville. Med. Rec. 144: 26, 1936.

The author believes in oral administration of allergens. Dust, pollen, etc., is obtained by exposing a wet cloth in the patient's environment and soaking the cloth. No specific diagnosis is made, or specific treatment attempted. If it works, this procedure should ruin the allergists.

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## NEWS ITEMS

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Dr. W. S. Judy delivered a paper on Developments in Managing Cancer of the Mouth at a meeting of the Greenville County Dental Society held in Greenville, November 13. A large number of local dentists and several visiting physicians were present.

Dr. and Mrs. H. K. Jenkins of Marion were recent visitors at the South Carolina Sanatorium, State Park, S. C.

Dr. Ben F. Wyman, Director of County Health Work for the State Board of Health, addressed the Euphradian Literary Society at the University of South Carolina, October 27. His discussion centered around the report of the Committee on Costs of Medical Care.

The following communication concerning Dr. Hays' Hospital of Clinton, S. C. will be of interest to the members of the medical profession throughout the State.

PROTESTANT DEACONESS HOSPITAL,  
Evansville, Indiana

Office of the Business Administrator, Albert  
G. Hahn

October 16, 1936

Dr. Hays Hospital  
Clinton, South Carolina.  
Dear Dr. Hays:

At the meeting of the National Hospital Day Committee of the American Hospital Association at Cleveland, September 28, your report for the observance of National Hospital Day, May 5, was reviewed and given first honorable mention in the group of hospitals in cities of less than 15,000 population. We deem this

quite an honor to receive honorable mention in national competition and we want to urge you to start planning now for your 1937 observance of the day.

Wesley Hospital, Wedena, Minnesota was given the certificate of award for the most outstanding observance this year.

Sincerely yours,

NATIONAL HOSPITAL DAY COMM.  
Mr. Albert G. Hahn, Chairman.

Considerable interest has been exhibited in different parts of the State in a hypodermic container which has been devised by Dr. I. D. Durham, of Columbia. This container is made of aluminum, is cylindrical in shape, has a well which holds alcohol, an inner core accommodating a 1-12 or 2 cc. glass syringe, a separate compartment for the syringe plunger and receptacles for two hypodermic needles. The core, holding the syringe and needles, screws into the base and is perforated in such a way as to permit of access of the alcohol to all parts of the syringe and needles. On top of this whole assemble is an aluminum screw cap, the whole making a neat, convenient and unbreakable outfit. Here the busy doctor has a satisfactory hypodermic and needle always at hand for any emergency that may confront him. Any one interested in the matter may get further information directly from Dr. I. D. Durham, Columbia, S. C.

Dr. J. F. Busch, Supt. of the Greenville County Tuberculosis Sanatorium, spoke on Health and the Teen Age, at the Parent Teachers Asso. of the Greenville High School, November 16.

## NEWS ITEMS

Dr. Leo F. Hall, Assistant Physician at the S. C. Sanatorium attended the Kershaw County Medical Society meeting, November 11 and addressed the Society on "Surgical Rest in Pulmonary Tuberculosis."

Dr. and Mrs. J. P. Harrison of Cheraw and two sons visited Mr. and Mrs. J. P. Harrison of Greenville recently, and attended the Furman-Carolina game. Dr. Harrison is an Alumnus of Furman.

The cancer or tumor clinic at Roper Hospital, Charleston, S. C. has been given a ranking as the only approved cancer clinic in North Carolina or South Carolina, and one of seven such hospital clinics in the country approved by the American College of Surgeons, according to an announcement by an official of the clinic.

Dr. L. B. Owens, Mayor of Columbia, attended the National Annual Mayor's Conference held in Washington, D. C., during the week of November 16th to 23rd.

Miss Caroline Anderson, daughter of Mr. and Mrs. John Julius Anderson and Dr. John M. van de Erve, both of Charleston, S. C. were married October 24. The ceremony took place at the French Protestant (Huguenot) Church, with the Rev. Dr. John van de Erve, pastor of the Church, and father of the bridegroom, officiating. Dr. van de Erve is a graduate of Clemson College and the Medical College of the State of S. C. He took post graduate work at Harvard University and the University of Chicago and is a specialist in Dermatology practicing in Charleston.

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